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Forecasting the Future of British Railways

DURING the past week widespread interest has been shown in the possibility of measures to reorganise the present structure of British Railways being included in amending legislation to the Transport Act now being drafted. A forecast of amendments being made to the Act was given in the King's Speech last November, but these were aimed at road haulage. Last Friday, however, Viscount Hinchingbrooke said in the House of Commons that the Transport Commission "would shortly die in its present form," and that a "very large surgical operation would be conducted on the Transport Commission and on its services, both rail and road." His remarks are reported elsewhere in this issue. Even before this comment was made, the *News Chronicle* reported that plans for considerable decentralisation of the British Railways system were being examined for submission to the Cabinet. The day after Viscount Hinchingbrooke had spoken, the *Daily Express* announced that a return to the old titles of the grouped railways was to be pressed in a new Transport Bill, this to be part of a scheme under which the present organisation would be decentralised and the railways would operate as self-contained regional groups. On the same morning *The Scotsman* put forward the suggestion that any changes of this kind might well go beyond giving greater administrative freedom to the Scottish Region and set up a separate Scottish Transport Board. Newspaper comment so far does not envisage anything as drastic as is implied by Viscount Hinchingbrooke's "large surgical operation," and any proposals submitted are, of course, liable to be modified in the light of other considerations. *The Financial Times* considers that longer than the six months forecast in the King's Speech will be necessary to prepare legislation for the future of road transport alone. As this industry is somewhat hampered by uncertainty as to its future, it would seem wise to devote most attention in a new Bill to its problems and its relations with railway transport, rather than to impose further territorial changes on the railways so soon after the tidying up recently completed by the readjustment of regional boundaries.

Mr. C. M. Cock

WHEN, in the autumn of 1950, Mr. C. M. Cock relinquished his position as Chief Electrical Engineer to the Railway Executive, to become General Manager of the English Electric Co. Ltd. Traction Department and a member of the board of the English Electric Export & Trading Co. Ltd., it was confidently assumed that his energetic personality would soon make a very real contribution to that company's activities in the electric and diesel-electric fields, an expectation realised in the past eighteen months. Similar expectations have been aroused in the locomotive engineering world on Mr. Cock's election as President of the Institution of Locomotive Engineers for 1952-53. Mr. Cock has had wide experience of railway electrification, extending not only over five years with the Southern Railway and Railway Executive, but also to earlier activity with Messrs. Merz & McLellan, Consulting Engineers, as Supervising Engineer on various G.I.P.R. and B.B.C.I.R. projects and as Personal Assistant to the Chief Resident Engineer on the Melbourne suburban electrification. During the coming session his forceful character will prove a great asset to this important Institution and his wide experience of electric traction is bound to leave its impress.

Train Cuts to be Restored

EVIDENCE of the success with which the winter freight movement problem has been overcome by British Railways is given by the announcement that most of the passenger train services suspended on October 29 last will run again as from April 7. These latest restorations involve over 120 weekday and Sunday trains, and are additional to reinstatements on sixteen routes effected since the beginning of this year. News of the satisfactory freight movement in the winter months was given by Mr. John Elliot, Chairman of the Railway Executive, in a speech we reported last week. More traffic was carried than in any winter since 1948. These results amply justify the passenger train withdrawals, which were planned skilfully to cause the minimum inconvenience to travellers by selecting lightly loaded services and those for which alternative facilities existed. The restorations of April 7 will be followed by certain weekend cross-country trains on April 18, as reported on another page. No doubt the experience of this and previous winters will be useful in planning future timetables so that cuts will not be necessary. An announcement of additional trains, if it were found possible to run them, would have a better psychological effect on travellers than further cuts.

Institute of Transport Annual Dinner

THE annual dinner of the Institute of Transport on March 21 celebrated the Institute's first meeting on March 22, 1920, when Sir Eric Geddes delivered an address on "Transport and the State." This subject, said the President, Mr. A. B. B. Valentine, was one on which the

last word had not necessarily been said even 32 years later. The Institute had as one of its chief guests Mr. Herbert Morrison, who in proposing the toast of "Transport," urged the public transport corporations to be enterprising, to move their management about for variety of experience, and to explain their problems to their customers. He advised politicians not to attempt too rigorous a degree of political control over transport, but to aim at blending business management with public accountability. Lord Runciman of Doxford, President of the Chamber of Shipping of the United Kingdom, in replying to the toast said a great deal of capital investment would be necessary in transport in the near future and we should know what to spend the money on. It would be necessary to know whether we should keep our railways for ever, or whether in the long run the roads would do the job better. These were questions in which the Institute could do valuable research.

British Transport Commission Statistics

THE first of the 1952 series of *Transport Statistics*, covering the four weeks to January 27, embodies several new features. British Railways' "ex-privately owned" wagons no longer are shown separately. Those remaining of the privately-owned wagons acquired on nationalisation, some 364,000 (357,000 mineral and 7,000 open merchandise) as at January 1, 1952, now are shown with other wagons under the appropriate head. They seem to be a large part of the 2,866 wagons withdrawn from service during Period 1; these were replaced by 2,333, of which 1,233 (1,177 mineral) wagons were purchased from contractors. The summary of staff gives the total, 241, of British Railways staff employed in Ireland and elsewhere, *e.g.*, in Paris, outside Great Britain at the beginning of the period. Trend figures are given for the traffic receipts, staff, and other operations of the various Executives, and additional comparable figures as between the current and preceding year for various B.T.C. carrying activities. The staff trend figures for British Railways show three groups, salaried, operating and miscellaneous, and maintenance grades; for Period 1, the total of the second group fell in 1950-51-52, whilst that for the third has risen slightly during the past year. The new price, 2s. 6d. a copy, doubtless is more economic than the one shilling previously charged.

Developments in Railway Curve Design

A PAPER presented by Mr. J. C. Loach and Mr. M. G. Maycock to the Railway Engineering Division of the Institution of Civil Engineers on March 27 described the work accomplished towards defining limiting values to be used in curve design. The task of doing so was undertaken by the Track Committee of the Railway Executive in 1949. In railway curve design it is essential that forward speed of the vehicle and radius of curvature should be considered along with cant of the track, rate of gain of the cant, cant gradient, cant deficiency, and rate of gain of cant deficiency. Whilst the cant itself was readily agreed by the committee, the other factors were not so easily settled and it soon became apparent that some tests should be made. The paper described all the tests conducted, and gave the limiting values finally recommended by the Track Committee for the other four items. Incorporating these limits, rules are developed in the paper for the equilibrium speed and the maximum permissible speed on curves in relation to the radius of curve, cant, and length of transition.

Main-Line Holiday Traffic Problems

LECTURES by railway officers to societies of various kinds have a useful function in that they present railway problems to listeners of varied interests and wide contacts. At the same time they provide an opportunity for questions which prevent the members of the audience from feeling that they have been mere targets for propaganda. A lecture of topical interest on the problems of handling bank holiday traffic at a terminus was given recently by Mr. W. E. Green, District Operating Superintendent, Kings Cross, Eastern Region. The speaker dealt at length with the problems of assembling stock for outgoing trains, servicing it, and then disposing of it until it is required without occupying sidings needed for the reception of further vehicles. After the holiday, removal of surplus stock that has come up on relief trains from the Provinces may involve providing main-line locomotives to haul it hundreds of miles to country sidings to await ultimate disposal. Such operations at a terminus with the congested approaches of Kings Cross may necessitate cancellation, curtailment or diversion of local trains, and the complex task of informing the public in notices and through station staff of the altered arrangements.

New Station at Johannesburg

SO great has been the expansion of Johannesburg in half a century that four new or enlarged stations have been constructed since the "Rand Tram" first entered the growing mining settlement in 1890. The first part of the latest station, which should adequately meet the needs for the foreseeable future of the still fast-growing city, was brought into service on September 9 last. Its new platforms, occupying what was formerly a well-known sports ground, are at present used by all trains, but when the adjoining station, dating only from 1932, has been remodelled to conform with the new structure, they will be served by the main line only. The scheme has included the lowering of the approach lines, which will much improve road connections between quarters of the city hitherto separated by tracks running at ground level. Some £2,700,000 of a total of approximately £8,000,000 has already been spent. When the project is completed Johannesburg Station, with 18 platforms, will rank as one of the finest and largest in the Commonwealth. The smooth execution of the works, with minimum disturbance to either civic or railway services, is a tribute to the skill of the planners.

Third Class Carriages for Ceylon

WITH a view to overcoming the shortage of third class coaching stock the Ceylon Government Railway rebuilt a number of third class carriage bodies on old underframes which in the normal course would have been condemned. Additionally, an order was placed with the Metropolitan-Cammell Carriage & Wagon Co. Ltd. for 65 third class carriages, and these are now in the course of construction. Designed to provide accommodation for 85 passengers, the bodies are of timber construction, while the interior is mainly of blockboard faced with Warerite; the floor is also of timber construction. Sheffield Twinberrow bogies are provided and the underframe is of all-welded construction consisting of rolled-steel channels and angles. Interior fluorescent lighting is fitted as well as embarkation lights; Metallic fittings are all stove-enamelled. Ventilation is provided by Rotomatic fans while Airvac ventilators are fitted on the roofs. A water tank is fitted beneath the underframes and water is distributed by Stone's electrically operated water raising apparatus. Further details are given elsewhere in this issue.

Modern Signalling in Pakistan

THE paper by Mr. H. F. Dennison on signalling developments on the Eastern Bengal Railway, before the Institution of Railway Signal Engineers on February 6, showed not only how the creation of Pakistan had affected the distribution and flow of traffic, but also how the outlook on signalling practice was changing with advance in design and greater opportunity for maintaining electrical equipment efficiently. Light signals and track circuiting, and at places electrically-worked points, are becoming increasingly used where a few years ago this would have seemed hardly possible. It is considered that improved facilities for keeping traffic on the move amply justify the steps and that electrical signalling will be preferred

to mechanical in most cases in future. At the same time the situation has its own particular difficulties, and precautions have to be taken against interference of a kind ordinarily not met with here, an interesting example being the special type of "contact" rail-bond, intended to obviate wires across the joints. In other places overseas similar tendencies are noticeable.

Rails and Locomotive Slipping

CONSIDERABLE damage can be done to rails, particularly at the exits from stations or on steep gradients, by the violent slipping of locomotive driving wheels. The increase of tractive effort in modern Pacific designs to about 40,000 lb., while the adhesion weight remains restricted to 60 to 66 tons, has been a contributory to this trouble by reducing the factor of adhesion. In the United States the same problem arises, but in accentuated form because of the considerably higher tractive efforts of the bigger engines and axle-loads up to 30 tons and more. Track engineers in the U.S.A. differ on what should be done with rails in which severe driving wheel burns appear. Some railways make a practice of grinding out the burned area from the rail-head, pre-heating to a dull red and depositing weld metal of a hardness as near that of the parent steel as possible, post-heating to ensure slow cooling, and finally grinding to a straight-edge surface. Other railways proceed similarly, except for burning out the damaged area (after pre-heating) rather than grinding it out. In both cases if the defect extends more than $\frac{3}{8}$-in. below the surface, no repair is attempted, and the rail is removed. Certain railways, on the other hand, remove the damaged rail or rails in any event from main running tracks, and re-use them in subsidiary lines only.

Prevention and Cure

COINCIDING with speculation in this country about possible measures to modify the present structure of nationalised transport, there comes a warning from a United States transport authority to his own people against letting the industry drift into the state once described here as "ripe for nationalisation." Colonel S. H. Bingham, Chairman of the City of New York Board of Transportation, and Consultant to the Long Island Transport Authority, was speaking to the Newcomen Society in North America. Great Britain, as it seemed to him, was "making vain attempts to denationalise her industries" and he ended his speech with the words "it is too late for Britain, but it is not yet too late for us." Colonel Bingham is opposed to nationalisation in the United States because he believes that nationalised industry, while it may be operated efficiently and economically, will never achieve the drive of an aggressive, well-run private enterprise. He acknowledges that the concept of public service can replace the profit and loss statement as a stimulus to some extent, but it takes time for this to happen and the intervening period is one of trial and error. It helps if a strong tradition of public service exists already, as in Great Britain.

Colonel Bingham approved the definition of the British Transport Commission's function as being to provide "an efficient, adequate, economical and properly integrated" system of public transport, and he considers that unless transport in the United States welds itself into such a system there will be a public demand for nationalisation to achieve the same object. The necessary conditions for saving public enterprise in transport might be created, he suggested, by establishing a Federal Department of Transportation and vesting the regulation of all forms of transport in an agency charged with developing and implementing a programme based on the maintenance of fair competitive standards for all. Such proposals, intended to change the legal pattern of taxation and regulation now hampering railways and urban transit undertakings in the United States, echo the "Square Deal" campaign of the British railway companies before the recent war.

If such measures fail to allow railways and urban transport to operate as private enterprises, Colonel Bingham offered a formula to "stave off the worst evils of government ownership where government and private owners have not been sufficiently far-sighted to permit private enterprise to continue in business." This would retain existing private managements, the method of government or municipal acquisition being by the issue of revenue bonds, or outright purchase of the transport property, which then would be leased for operation to private enterprise. Both suggestions were put forward as last-ditch measures to be adopted only after it had been shown that private enterprise could not operate at a profit and provide an essential public service.

Meanwhile in this country a correspondent in *The Financial Times* has written of the uncertainty prevailing in the road transport industry pending the expected legislation to amend the Transport Act. Just as Colonel Bingham suggested the compromises outlined above as a means of preventing all-out nationalisation, there have been various proposals here for something between complete denationalisation and retention of the *status quo* as a cure for the present uncertainty and dissatisfaction. A suggestion by the Association of British Chambers of Commerce proposes abolition of the 25-mile limit on private hauliers and licensing of all nationalised vehicles, but foresees the retention of the Road Haulage Executive in smaller units no longer under the control of the British Transport Commission. The problem in drafting any legislation of this kind will be to see that greater freedom for road hauliers is combined with measures to ensure for the railways freedom to compete on level terms for the more lucrative freight, such as was asked for by the main-line companies in their "Square Deal" campaign of the pre-war years. Events since that time have increased the complications that would arise from handing one form of transport back to private and retaining the other in public ownership. It is likely, however, as *The Financial Times* suggests, that new legislation will be formed so that a change of Government would not result in its immediate repeal, and that therefore we may look forward to the continued development of road and rail transport as complementary services.

Steel Supplies

THE statements made last week by Mr. Gurney Braithwaite, Parliamentary Secretary to the Ministry of Transport, in the House of Commons debate on employment among railway works staff caused by the steel shortage, are moderately encouraging. The debate is summarised elsewhere in this issue. The Minister of Transport, Mr. J. S. Maclay, had already explained that the Defence Regulations provided for rearmament work in railway workshops; it is good news that the Ministry of Supply is in touch with the Railway Executive over use of surplus workshop capacity, and that defence work already is in hand at Horwich, not unduly long after the Executive has had time to scale its building programme down to the reduced allocation. Further redundancy is avoided of skilled men whose services would be very hard to recover once they had left the railway service, and costly plant will not be allowed to lie idle.

Such use of railway works for non-railway purposes is only a palliative. The locomotive and rolling stock situation on British Railways demands that railway works, amongst which the functions of those taken over from the main-line railways have been redistributed as a measure of rationalisation, should be devoted to their proper purpose as soon as enough steel is available. Mr. Braithwaite could hold out no hope of early radical improvement in the steel position. He could only reiterate Government concern that the effective wagon fleet should suffice for the heavy freight traffic handled by the railways. The Minister of Supply, however, has agreed with the British Iron & Steel Federation that although steel will continue scarce, supplies are likely to increase in the

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second half of this year. The Government has no intention of abandoning the steel allocation scheme; but the allocations for the first and second quarters seem to have been made on a "worst possible" basis, so that increases may be possible, especially when imports of steel from the U.S.A. become available from July. These are expected to reduce the estimated shortage for 1952 from 1,500,000 to 500,000 tons, and the shortage was assessed before certain new factors were known which must restrict the demand for steel, such as reductions in capital investment resulting from the Budget.

Any marked increase in steel supplies must allow British Railways to go ahead with their locomotive and wagon building programmes, now likely to be cut by one-half and one-third respectively. How far passenger coach construction, despite its importance in the earning of revenue, can be resumed without a very considerably increased availability of steel, is problematical; new passenger stock may seem to the Government a luxury compared with rearmament and exports, which latter include material for overseas railways manufactured by one of the most important groups of industries in the country. Meanwhile, the Government is to denationalise steel. The bill about to be published, however, provides for a board with supervisory powers over the whole iron and steel industry with special reference to planning. Whatever the outcome, it is unlikely that the measure will result in any appreciable change in the steel situation as it affects British Railways and the railway export industries for some time to come.

A Loan for the East African Railways

THE East African Railways & Harbours are to seek authority to raise £30,000,000 additional capital. The decision was taken after the consultations in London between Ministers for the Colonies, Colonial Office officials, the Chairman of the East Africa High Commission, and the Commissioner for Transport in East Africa, to which we referred editorially last week. A Bill to confer powers on the Administration to raise the loan will come before the East Africa Central Legislative Assembly next month. Arrangements have been made to find the short-term finance to enable urgent works at the Port of Mombàsa, where congestion has occurred intermittently for some time, to be put in hand at once.

The great increase in traffic on the East African Railways since the war—the 1951 volume was 113 per cent. more than that of 1939, taking the combined Kenya-Uganda and Tanganyika systems for that year—has placed a severe strain on the capacity of the railways and harbours. Although almost £40,000,000 will have been spent in the seven years ending December 31 next on new lines, realignment, new harbour works, rolling stock, plant, and so on, the expansion of the three territories has been so great that the railways are only just able to cater for requirements. When current development plans come to fruition the resulting goods and produce will be immovable unless the capacity of the harbours and railways is increased. Conversely, limitation of transport capacity may retard the execution of desirable projects.

The development of the Kilembe Copper Mine in Uganda alone would add 100,000 tons to the annual tonnage hauled, and would require the construction of nearly 200 miles of line. Soda, kyanite, and mullite production is increasing, and prospects for diatomite, graphite and asbestos are good. Kenya timber is likely to reach 100,000 tons for export. Industrial development of the minerals and fertilisers at Tororo, and projected cement factories in Kenya, should produce large tonnages.

In Tanganyika, the Mpanda Mine is developing apace, and it is probable that sisal production will much increase for some years. On both systems, traffic with the Congo is fast growing and, if the coal deposits in Tanganyika on Lake Nyasa are to be exploited, heavy additional railway commitments are involved. Industry is rapidly expanding, a process which the completion of the Nile barrage at Jinja will stimulate. An export trade in meat will probably be developed in time. Substantial quantities could be exported in processed form, given the necessary rail facilities both for the transport of the livestock to the processing factory and the distribution of the processed product. These tonnages, the consequent import traffic, and new projects continuously being launched cannot be handled by facilities existing and so far projected, hence the urgency of financing further development.

As it may be impossible to secure all the finance required as soon as desirable it will probably be necessary to go outside the London market, with the result that the East African public may have to pay higher charges for servicing the loans so raised. When the finance has been obtained it may not be possible to obtain plant and equipment, including rolling stock, as early as circumstances require. Nevertheless, it is highly satisfactory that agreement has been reached to go ahead vigorously and as rapidly as possible with major expansion of the railways and harbours to a point where they can cope with the expanding production which can be foreseen in territories with a continuously expanding economy.

Operating Results in January

NO. 1 of the 1952 series of *Transport Statistics* records a welcome, though partial, improvement in British Railways' freight working during the first four weeks of the year. Operating results, as was to be expected, surpassed the poor performance in the difficult opening period of 1951. For the most part, they were also better than the statistics for January, 1950. Originating tonnage was 572,000 tons above the meagre forwardings in 1951, but 201,000 tons below 1950. The merchandise tonnage was the smallest in any January since nationalisation, being nearly 7 per cent. less than in 1949, while the mineral tonnage was the highest. Rather surprisingly, 91,000 less tons of coal were put on rail than in 1950.

The average haul of freight traffic was longer in January than in the three previous years. In consequence there was in increase of fully 3 per cent. in net ton-miles, shared by all Regions. The heaviest burden fell upon the Eastern Region, which worked 22,805,000 more ton-miles than last year by running 116,000 more freight train-miles, without adding to the number of train engine-hours in traffic. Despite an increase of 43,000 train-miles, the London Midland Region cut down engine-hours by 6·5 per cent. and the other Regions, except the Scottish, also reduced train engine time. These variations led to an advance in "net ton-miles per train engine-hour" for the whole system from 1,051 in 1950 and 1,025 in 1951, to 1,094. Evidently working conditions in the Scottish Region were unfavourable, as its figure of 900 compared with 895 in 1951 and 943 in 1950. The North Eastern Region had the best return of 1,356 and also worked 252 wagon-miles per train engine-hour compared with the general average of 215.

The average wagon load at starting point rose to 8·6 tons owing to the better loading of minerals and coal. That was the best result for any January period, as was the train load of 161 tons. Perhaps the most satisfactory result of all was the freight train speed of 8·23 m.p.h., again the highest recorded by British Railways in the January period. The North Eastern Region topped the list with an average of 9·85 m.p.h. Only the Western and Scottish Regions failed to move the average freight train faster than in 1950, but they both exceeded the speed in the London Midland and Eastern Regions.

In considering these freight traffic statistics, it should be remembered that British Railways gave priority to the movement of goods and minerals. In January, coaching train-miles were 791,000 less than in 1950. This cut of 4·4 per cent. would ease freight working in each Region in a varying degree. It is noticeable that the Western Region, which made a drastic reduction of 7 per cent. in coaching train mileage, did not succeed in moving freight with the efficiency shown two years ago. Its originating tonnage was 286,000 tons greater than in 1951 and 79,000 tons above 1950. Such wide fluctuations in traffic are bound to bear hardly on a Region which is not so well

equipped with either independent tracks or sidings as the London Midland, Eastern, and North Eastern Regions.

On the whole, British Railways have begun 1952 in promising style. We hope that each succeeding issue of *Transport Statistics* will indicate a further acceleration of freight movement.

Malayan Railway

THE administration report of the Malayan Railway for the year 1950, a copy of which we have received from Mr. J. O. Sanders, the General Manager, shows that the earnings of the combined services were $40·9 million, an increase of $4·1 million or 11 per cent. on the previous highest total in 1949. The total revenue including interest on investments and other net revenue account receipts amounted to $42·5 million. Operating capacity continued to be severely restricted by disruption of services by bandit sabotage, and substantially increased transit times and limitations on night working resulting from it; locomotive power had also to be diverted for security purposes, and in general the state of emergency adversely affected revenue. The demand for transport of goods was frequently unable to be met due to the reduced capacity available, and serious loss of revenue resulted. Nevertheless increases of 16 per cent. in tonnage and 25 per cent. in paying net ton-miles were successfully handled, thus reflecting great credit on all departments concerned. Due to higher prices of tin and rubber and the consequent prosperity of the country, imports increased substantially. A disturbing long-term factor was the considerable increase in the licensing of road vehicles—justified by the reduced railway capacity caused by the emergency—as it will greatly intensify competition when emergency conditions cease.

Total working expenditure, excluding renewals fund contributions reached $36·8 million, or $3 million more than in 1949. The main causes were increases of 17·5 per cent. in train-mileage, and $0·5 million in revenue expenditure on new works and betterments, as well as in creased wages as from July 1, 1950. Despite a reduction in number of employees, the salary and wages bill continued to grow. In fact, the numbers employed in 1939, 1949 and 1950 were 12,608, 13,421 and 12, 853 resepectively, whereas $7·25, $20·14 and $20·48 were the corresponding costs of salaries and wages in those three years. The $4 million net revenue balance was credited to the renewals fund against an assessed liability of $5 million. Expenditure on reconstruction and rehabilitation during 1950 totalled $13·7 million, which was met from local loans, $6·3 million; reconstruction reserve fund, $2·2 million; and renewals fund, $5·2 million. Of the $13·7 million some $800,000 was charged to capital account.

The following are some of the more important results of the year's working:—

	1949	1950
	(Thousands)	
Railway—		
Coaching train-mileage	1,353	1,576
Goods train-mileage	1,784	2,110
Passenger journeys	4,442	5,759
Tonnage of goods carried	1,761	2,036
	($ thousands)	
Coaching revenue	10,976	10,657
Goods traffic revenue	19,830	22,880
Total revenue	31,060	34,196
Working expenditure	27,336	29,020
Road Services—		
Revenue	745	741
Working expenditure	809	832
Wharves—		
Revenue	3,377	4,307
Working expenditure	3,218	4,137
Ferry Services—		
Revenue	343	432
Working expenditure	561	436

During the year under review the railway was the target for over 400 attacks by bandits, as compared with only 49 in 1949. The track was sabotaged on 150 occasions and 58 derailments of trains resulted. On 58 occasions trains were fired on, two stations were burnt down, and telecommunications were seriously disrupted. The attacks caused the deaths of 10 passengers, 7 Government employees and Police, and 6 railwaymen, and injuries to 59 passengers, 12 Police, and 63 railway employees. During October alone nearly 80 incidents occurred and the main line was blocked at one or more places for 120, 210 and 150 hr. during September, October and November, 1950, respectively. The protection of night trains and other security measures continued to be taken, and the railway received valuable assistance from the Police and Military. During the year 107 locomotives and 38 other vehicles were provided with protective armour. Repairs to engines and other vehicles damaged by sabotage derailments materially affected the normal output of the workshops, and three coaches were damaged beyond repair. A restoration of bandit damage fund was established, and a sum of $270,000 was transferred to it from revenue.

The report pays a tribute to the staff who continued to discharge their duties in the face of so many attacks. As a result there was a substantial increase in train-mileage and over 2,000,000 tons of public goods traffic were able to be carried. Two locomotive drivers were honoured during the year by being awarded the British Empire Medal by the King for their courage and devotion to duty. A note at the beginning of the report explains that due to pressure of emergency work on all departments, detailed explanation and comment has been curtailed in the report.

Steam Locomotive Development

THE first edition of Monsieur André Chapelon's book, "La Locomotive à Vapeur," reviewed in our April 15, 1938, issue, was speedily exhausted and there has been a constant demand for a second edition. This has now been met by a new edition which is being brought out in two parts, of which the first has now been published. The revision and re-arrangement of the previous material and the addition of new matter covering significant advances in the past fourteen years justify this division, without which the book would have become too unwieldy.

The needs of the war resulted not only in locomotives for war service being designed but also dictated a search for new means, such as the now widespread use of welding, to combat restrictions on materials. In addition there appeared for ordinary duties new designs of machines which would have been conspicuous even in peacetime, including, in this country, the Bulleid Pacifics. To these developments the work does full justice. The first part is concerned mainly with general considerations of steam traction, such as the increase in loads and speeds, reduction of fuel consumption, compounding, streamlining, and re-superheating. More than 350 types of locomotives are discussed, with an indication of their characteristics and details of the noteworthy results which have been achieved with some of them, culminating in the record run of *Mallard* in 1938.

The book is brought up to date by reference to the recent steam locomotive building programmes of Great Britain, Germany and Russia. In the second part of the new edition, which is yet to appear, Monsieur Chapelon will discuss more specialised considerations, including the theoretical and experimental study of the steam locomotive, as much as a heat-producer and heat-user as a tractive unit on rails, and its effect on the track and stability.

Monsieur Chapelon in his preface to the new edition says that in spite of developments in diesel and electric traction the steam locomotive still handles most of the world's railway traffic. Without sacrificing any of its essential and traditional features it is still capable of being perfected, and it is already possible to contemplate within the same general dimensions an increase in its tractive effort of up to 40 per cent. The fact that in the United States in 1949 diesel locomotives moved a third of the freight traffic is considered to be no definite proof of their technical or economic superiority, and the author believes that many years of practice will be required before such a conclusion can be reached. The steam locomotive, in short, is seen as occupying a fortress hard to storm. Whether new forms of power, such as a turbine locomotive running on pulverised coal, will eventually dislodge it from its stronghold only time will show.

LETTERS TO THE EDITOR

(The Editor is not responsible for the opinions of correspondents)

Movement of Mineral Traffic

March 18

SIR,—In your March 14 issue a generously worded letter from Mr. F. Scopes told us that in 1951 British Railways carried nearly 2,000,000 more tons of iron ore than in 1950. It is odd that the British Iron & Steel Federation should be the body to explain the increases in mineral traffic since the month of May. Without the extra iron ore, British Railways could not have carried "more traffic this winter than in any winter since unification."

Comparing the 16 weeks from October 8 to January 28 this year with the corresponding period of 1949-50, merchandise tonnage was down 92,000 tons, coal was down by the same amount, but minerals were up 494,000 tons. The net increase of 310,000 tons thus consisted of traffic producing the lowest revenue per ton and per ton-mile. These trends are disquieting to those who wish to see our railways recover their one-time prestige, seeing that industrial production and coal output have been on the up grade.

The U.S.A. railways never keep back news of their important traffic movements. On February 20 the Association of American Railroads announced that a tentative programme of 96 million tons had been set for the transport of iron ore from the Northwest mines by the joint Great Lakes and railway services, which operate from April to October. In addition about 100 wagons a day are now being hauled over all-rail routes from the mines to Eastern steel mills. These arrangements may beat all ore-carrying records this year, but the A.A.R.'s monthly bulletin will report progress as soon as the Lakes are open for navigation. The bulletin gives precise information about all large streams of traffic, so that an outsider can see how the railways adjust their working to cope with fluctuating demands for transport. They order this matter better in Washington, D.C.

Yours faithfully,

R. BELL

Frognal, N.W.3

Missed Connections

March 13

SIR,—If the letter from Mr. M. B. Thomas in your March 7 issue expresses an official view, one cannot help thinking that it might have been better left unwritten. "The few passengers who are held up because of a missed connection"—in the case under review, from 12 to 15 passengers who were doomed to lose 3 hr. apiece—are to be sympathised with, but nothing whatever is to be done or even attempted to help them.

Mr. Thomas writes of the direct telephone connection available between Doncaster and the central control of the Eastern Region in London, but does not state whether any communication was made with London on this occasion, or if the incident was regarded as too commonplace for further action to be taken. "Spreading the delay over a much wider field" had been done already on a most comprehensive scale by the 70 min. late arrival at Doncaster of the "White Rose," which had delayed both the "Flying Scotsman" and the 10.5 a.m. Glasgow train. To speak of an additional 3 or 4 min. at most in the running of the last-mentioned, by a stop at Doncaster to pick up the stranded York passengers (especially as this train actually was all but stopped in the station by signals) as though this would be the only cause of the "much wider field" of delay, is simply begging the question.

It appears that other Regions give considerably more liberty to the man on the spot in dealing with situations of this kind. An operating official at a district control on the principal main line of another Region has since told me that, at the junction at which his control is located, there would have been little hesitation in stopping an express specially in such circumstances, on district control authority. I have just heard from a member of the staff of a third Region that recently an important named express to the West was stopped at a junction, on the authority of an acting stationmaster, to pick up a few passengers who had been stranded by a missed connection. His action was enquired into later at a higher level, but when the facts were known, there was no condemnation of an experienced man who had thus acted promptly in the public interest.

I note in your March 14 issue that on a fourth Region, the North Eastern, when on March 10 the 8.50 a.m. from Newcastle to Liverpool broke down in Bramhope Tunnel, with the result that a few passengers from Harrogate by the 11.45 a.m. train missed their London connection, a special train was put on to get them to Doncaster. Such actions seem a considerably better advertisement for British Railways than the unhelpful attitude of Mr. Thomas's letter.

Yours faithfully,

CECIL J. ALLEN

70, Rowlands Avenue, Hatch End

Royal Funeral Train Locomotive

March 22

SIR,—I hasten to assure Mr. A. C. Smith that I fully understood the points he was making in his original letter and my standard of values was in no way mistaken. I deplore the decision that the transfer of name and numberplates and commemorative discs between "Castle" class locomotives Nos. 4082 and 7013 is to be permanent, but I deplore, too, the fact that Mr. Smith should have thought fit to censure the Western Region authorities for their handling of a rather difficult situation at the time that the funeral train arrangements had to be made. Even worse was the implication that the authorities hoped that what had been done would go unnoticed because no immediate general announcement was made of the changeover.

Yours faithfully,

P. J. LYNCH

3, Willian Way, Letchworth, Herts.

Diesel and Steam Locomotives Compared

February 23

SIR,—With reference to correspondents' recent letters, I consider it is only too easy to draw misleading conclusions from the published statistics of numbers of steam, diesel and electric locomotives under or awaiting repair at a particular moment.

It must be remembered, for instance, that the diesel locomotives in the world today are nearly all new compared with most steam locomotives. A number of European and American railways has a surplus of steam locomotives at present. There is therefore less incentive to rush them through shops. As American diesels are standardised, it is possible to repair or overhaul them in a few days by taking out their mechanisms and substituting recently overhauled mechanisms. I think there is scope for streamlining the overhaul of steam locomotives little more than at present.

In the U.S.A. I understand that part of the ordinary day-to-day maintenance of multi-unit diesel locomotives is done while the train is in motion by carrying fitters with the train and switching out a unit over some of the easier sections of the line.

The annual mileage figures of U.S.A. diesel locomotives often seem staggering to the British mind. The annual mileage of many American steam locomotives is often equally staggering, though I admit it may not come up to the diesel figures. According to a recent issue of an

American magazine Norfolk & Western No. 600 has recently completed 1,620,058 miles since it was built in 1941, yet I believe there are very few locomotives in this country that have completed 2,000,000 in their whole lifetime.

Yours faithfully,
J. B. LATHAM

18, Wheatsheaf Close, Woking

World Railway Speeds

March 8

SIR,—Your February 29 issue roused me to reflection on the days of great pride and to joy at the position then held by our railways. I deemed it best to wait as I fully expected that some of your readers would contribute to your columns.

I felt disappointed then when reading the magazine the following week I came on the letter by Mr. Sewill, for while I admit that there was much in your article to arouse sadness and regret, I felt that your contributor was, in looking for the cause, far astray.

The trouble is not, in my view, to be found in a type of trade union philosophy that has hitched itself to a somewhat morbid political creed, for nowhere do we find these theories more strongly entrenched amongst the workers than in France and Italy, two of the countries now surpassing us in railways.

We must look for deterioration rather in government and particularly where enterprise is being stifled by the financial pundits whose forebodings and apprehensions are a continual blanket on men of imagination below them.

We may expect that degeneration in British railway transport will be explained by shortage of manpower, dilapidation, need of track renovation, and stinted materials. These pleas cannot be wholly accepted when we are mindful that the comparison is not merely between this country and wealthy America. In the picture are states whose railways have suffered far greater havoc in the war than our own and whose financial systems are much worse.

Yours faithfully,
B. NEWTON BROOKE

5, Prospect Vale, Heald Green, Cheshire

Liverpool Street-Shenfield Electric Trains

March 17

SIR,—As a regular traveller between Liverpool Street and Shenfield I have noticed that the guards' compartments in the electric stock are rarely used for the conveyance of either passengers' baggage or parcels traffic; and there are three such compartments in a normal train.

It would be fairly easy, during major overhauls, to rebuild the motor coaches, eliminating these large wasted areas, and providing 12 extra seats per car, or 36 in a nine-car train. The guard could occupy one of the driving compartments, if all the stock were so modified.

I am aware that the headroom is restricted under the pantograph well, but it is sufficient, being at least as great as that in tube stock.

Yours faithfully,
J. RODGERS

165, Priests Lane, Shenfield

Publications Received

British-Built Gas-Turbine Locomotive. Reprinted from *The Railway Gazette*, February 1, 1952. London: Tothill Press Limited, 33, Tothill Street, S.W.1. 11½ in. × 8½ in. Illustrated. Paper covers. Price 5s. net. Constructional details of the gas-turbine locomotive recently built for the Western Region, British Railways, by the Metropolitan-Vickers Electrical Co. Ltd. are given in this reprint of an article which appeared in our February 1 issue. The publication is fully illustrated and includes a folding plate drawing of the elevation and plan of the locomotive together with a sectional elevation drawing of the 3,000 h.p. power unit. Diagrams include performance curves and the electric traction power circuits. Features of construction are given in detail and include a technical description of bogies, prime mover, traction motors, generation, and auxiliary equipment. The method of operating and the control scheme of the locomotive are also described.

Refrigeration Principles and Practice. Edited by Ezer Griffiths. London: Geo. Newnes Limited, Tower House, Southampton Street, Strand, W.C.2. 8¾ in. × 5½ in. × 1 in. 542 pp. Illustrated. Price 42s. net.—A number of contributors specialising in various branches of refrigeration practice have participated in the production of this valuable review of modern technique. Separate chapters are devoted to refrigeration in land transport and at sea, and descriptions are given of experience with insulated vans, pre-cooled fruit vans, mechanically refrigerated railway vans, and insulated containers. Two chapters deal respectively with air-conditioning requirements and practical installations. Maintenance and fault-finding hints and a survey of modern apparatus are included. The book is fully illustrated with diagrams of plant and typical installations. An index extending to 12 pages and a buyer's guide are useful features of a work of reference to which those concerned with refrigeration are likely to have frequent recourse.

La Locomotive à Vapeur. By André Chapelon. Second edition. Part I. Paris: J. B. Baillière et Fils, 19 Rue Hautefeuille, 6e. 10½ in. × 8 in. × 1½ in. 648 pp. Illustrated. Paper covers. Price 7,000 fr. (post free, 7,550 fr.) net.—This is the first part of a new edition of Monsieur André Chapelon's well-known work, originally published before the war. It is reviewed in an editorial article in this issue.

The London Chatham & Dover Railway. By R. W. Kidner. The Oakwood Press, "Tanglewood," South Godstone, Surrey. 8 in. × 5¼ in. 42 pp. Illustrated. Cloth covers, 9s. 6d.—The London Chatham & Dover chose well its motto "Invicta"—that of Kent, for whose favours it contended with the South Eastern—for it rose above vicissitudes which might have vanquished a less resilient concern. Though it was largely the short-sightedness and cupidity of the South Eastern in the first place that allowed the East Kent Railway to gain independent access to both Dover and London, the "Chatham" always seemed to be a pet of Parliament. The strong contractors' element at once led the new company into costly ventures and before long to financial collapse. Although its house was set in some order it never became affluent, but as Mr. Kidner says, "it tried to do a lot with a little." Its marine department in particular was progressive. One of the magnates of the Victorian railway world, James Staats Forbes, watched over its varying fortunes for forty years. It is likely that but for the antipathy between him and Watkin of the South Eastern the rival systems would have come together sooner. After the *rapprochement* in the 'nineties when Watkin had retired and Forbes had none to fight, the affairs of both companies took a more prosperous turn. Their union in 1899 was a working agreement not an amalgamation—and they retained their statutory independence though controlled by a joint management. If the London Chatham & Dover had its faults, it had redeeming features, to which Mr. Kidner in his lively account does full justice.

Infra-red Heating for Wood Veneers.—An illustrated leaflet describing the use of infra-red heating for drying synthetic finishes applied to wood veneers has been issued by the General Electric Co. Ltd. A feature of this quick-drying process is the considerable reduction in drying time compared with air-drying methods. Heating can be carried out on a horizontal or overhead conveyor, which reduces the risk of damage to the finished veneers. The plant incorporates Osram infra-red reflector lamps mounted in secondary reflectors of special aluminium alloy. Banks of lamps can be positioned to suit requirements.

THE SCRAP HEAP

Elephantine Error

A circus elephant stopped the Gothenburg-Stockholm night express about halfway on its journey to the capital. Riding with two others in the luggage van, it playfully pulled the emergency brake lever with its trunk. The keeper explained: "He plays a piano in the circus and must have been trying to practise."—*From "The Times."*

"Dispirited Defence"

A letter from the Chairman of the British Transport Commission appeared in yesterday's *Times*. In this, his first public appearance on the subject, Lord Hurcomb makes a dispirited defence of the recent increases.

Both London Transport and the Commission failed early this month to explain why what was announced as a 20 per cent. increase on charges should amount in many cases to a 60 per cent. rise and in some to even 100 per cent. . . . Lord Hurcomb, who bears direct responsibility, presents his case—which explains only the 100 per cent. increases—to the public a fortnight later in a letter to a single newspaper having a London circulation less than any other except the *Daily Worker*.—*"Peterborough" in "The Daily Telegraph" of March* 20.

Colourful Diesels

Industrial users of diesel locomotives sometimes outdo the variety of the pre-grouping railway companies in chosing distinctive liveries. *Mettle*, the house magazine of Marshalls of Gainsborough, Fowlers of Leeds, and Marshall Richards of Crook, records the following schemes for recently ordered Fowler locomotives; Oxford blue, lined Cambridge blue, for the British Electricity Authority; Midland Railway red for Courtaulds Limited; and aluminium lined in black for the State Electricity Commission of Victoria. A locomotive for Bachelors Peas Limited was painted dark green with lighter green pea vines winding over the bonnet, on which a large tin of peas was superimposed. As an appropriate send-off for these glamorous adornments, the locomotive began its career with a naming ceremony by Christine Norden, the film actress.

Bouquet for British Railways

From across the Atlantic comes praise for the hard-kicked British Railways.

Colonel Bingham, boss of the New York City Transport Board, says American railways have much to learn from them. Glowingly he speaks of British Railways' "efficient, economical, adequate and integrated service."

But while the Colonel is exchanging compliments, the travelling public of Britain would be grateful if he would also exchange some information.

They would like to know how it is that the railways of America, operated by free enterprise, run at a profit, while the railways of Britain, operated by the State, run at a stupendous and ever-increasing loss?—*From the "Daily Express."*

Runaway Electric

On March 18 an electric shunting locomotive was working in the yard at St. Jean de Maurienne on the Culoz-Modane line of the French National Railways, which is electrified at 1,500 volts, partly overhead, partly third rail. This locomotive, equipped with pantograph only, overshot the overhead wire section while running on a down gradient with a 1,200-ton mineral train. As presumably the air containers were nearly empty and the handbrakes were not strong enough to hold, the train gathered speed, but the driver and his assistant were able to jump off. The runaway covered 56 km. to Montmélian in 24 min.—average 140 km.p.h. (87½ m.p.h.) over a section where the speed is limited to 70 km.p.h. (56¼ m.p.h.). At Montmélian, staff managed to divert it from the main line on to a rising gradient, and applied the wagon brakes.

Oh, Mr. Station!

The Stationmaster at Euston recently received a letter addressed to "Mr. Master, The Station Esq., London. England," which was found to contain a single sheet with writing in Arabic or some similar language.

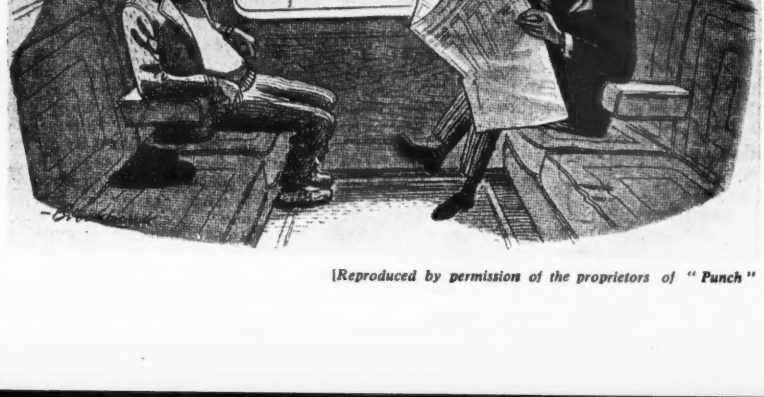
A translation by one of the station staff showed that it was a request to the B.B.C. to play two records over the Arabic service of its overseas broadcasting system. — *"British Railways Magazine."*

Penzance Station Centenary

March 11 was the hundredth anniversary of the opening of Penzance Station, and the section thence to Redruth of the West Cornwall Railway. Through communication with London was not made until August 1, 1859, when a connection was completed in Truro between the West Cornwall and the Cornwall Railway, opened from Plymouth to Truro on May 4, 1859.

Both companies were authorised on the same day, August 3, 1846, although the West Cornwall was formed in 1844 and in 1845 took over the old Hayle Railway which it rebuilt in part.

Three trains ran daily between Redruth and Penzance, with two on Sundays. All took 1 hr. for the 16½ miles. Single fares were 3s. first class; 2s. second class, and 1s. 4d. third class. Returns, available only on day of issue, cost 50 per cent. more.



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Any Moment Now!

I can feel it in the breeze,
There's a hang about the trees,
There's a jauntiness about,
Bubbling up and bursting out;
Even parcel porters smile
Once in every little while
And the stationmaster's eye
Doesn't gleam so frostily.

The old, crabby booking clerk
Sometimes seems inclined to lark
And to hint, maybe with truth,
At some high spots in his youth,
While the guardians of the track,
Massaging each aching back,
Turn their faces, weather-wise,
To the ever-changing skies,
Seeking for the subtle signs
Of Persephone's designs.

Lots of writings on the wall—
Boat Race, "Lincoln," "National,"
Yet, whatever others say,
I'll believe Spring's on the way
When I've read the Press Boys' Tales
Of the L.P.O. spring sales.

A. B.

OVERSEAS RAILWAY AFFAIRS

(From our correspondents)

PAKISTAN

Station Renaming

Jhang Maghiana Station, on the Shorkot Road—Hundewali section, Multan Division, North Western Railway, has been renamed Maghiana. Jhang City Station is now known as Jhang.

EAST AFRICA

Congestion at Ports

A bill recently introduced will, if authorised, enable the Commissioner for Transport to declare a state of congestion at any East African port, and empower him to order the removal of all import goods from transit sheds within 28 days from the date of publication of the declaration. Goods not removed within that time could be sold under the provisions of the Bill, which is an amendment to the existing East African Railways & Harbours Administration Act of 1950. The General Manager of the Railways & Harbours would first notify the Commissioner for Transport that a state of congestion existed at a particular port. The Commissioner could then, if necessary, put the "move, or sell" order into operation.

CANADA

New C.N.R. Line in Manitoba

The Canadian National Railways expects to spend $7,800,000 this year on the construction of a line between Sherridon and Lynn Lake, Manitoba, 155 miles. Last year $1,206,000 was spent on the line, which was authorised early in the year. The line, which will open up a new base metals mining area, is to cost $14,725,000.

UNITED STATES

Avoiding the Sherman Hill

West of Cheyenne, Wyoming, the Union Pacific main line goes over one of the highest railway levels in the United States, the 8,014 ft. of Sherman summit. Between Cheyenne and Sherman the line climbs 1,954 ft. in 31 miles, with a ruling gradient of 1 in 64½ which compels the use of the heaviest articulated locomotives in the world—the 540-ton 4-8-8-4 "Big Boy" class—working continuously at 65 to 75 per cent. cut-off, as well as pilot locomotives to move heavy westbound freight trains to the summit.

Work has now begun on a new 42-mile westbound track out of Cheyenne to cost $1,600,000, and which, although it will increase the distance by nine miles, will reduce the ruling gradient to 1 in 122, and will do away with much of the double-heading of trains now necessary. The new line will rejoin the old line at Dale Creek, three miles west of Sherman and at 7,854 ft. altitude. The existing double-track main line between Cheyenne, Sherman, and Dale Creek will be singled for most of its length, and still used by eastbound trains. The heaviest work on the new line will be two embankments each 150 ft. high.

Dieselisation of the New Haven

On April 27, with the delivery of fifteen 1,600 b.h.p. diesel road-shunting units, and eight 2,400 b.h.p. passenger units, the introduction of the summer timetable of the New York New Haven & Hartford Railroad will coincide with the withdrawal of the last steam locomotive from active service on the system. Between New York, New Haven, Danbury, and New Canaan, 127 route miles of this 1,819-mile system are electrified, but the remainder from the date mentioned will be worked exclusively by a fleet of 378 diesels, which will have cost over $54,000,000, and have an aggregate b.h.p. of about 500,000.

The changeover has taken place since 1931, when the first diesel shunter was introduced. Later, the New Haven broke new ground by installing the first ten diesel units in the United States which could be used interchangeably on freight and passenger service. Other important American railways, such as the 2,905-mile Gulf Mobile & Ohio, and the 1,252-mile Lehigh Valley, already are completely dieselised, and several other major systems are rapidly approaching the same goal.

BRAZIL

Imports of Railway Material

During the first nine months of 1951 rails and accessories were imported valued at £206,980; locomotives, £2,403,380; accessories for locomotives, £360,780; wagons, £1,438,680; accessories for wagons, £429,140.

In January, licences were issued to import railway materials, valued at £268,271 (locomotives and accessories, £77,682; rails and accessories, £52,109; sundries, £24,860; briquettes, £113,620). Permits for British materials included briquettes and sundries, valued at £122,007. The value of orders placed in Germany amounted to £15,602. With these exceptions all orders went to the United States.

Improvements to Central Railway

As a result of the serious accident on March 4 on the Central Railway, reported in our March 7 issue, President Vargas has called for a report on the condition of the permanent way of the Central Railway. The accident was caused by a split rail, which caused coaches of the train from Belo Horizonte to overturn at Anchieta, just as a suburban electric train was passing.

The report emphasises the precarious condition of the permanent way and recommends replacing worn sleepers, respacing in the proportion of 2,080 units to the km. (instead of 1,365, at present); reinforcing the sub-ballast over 621 miles of line; replacing the existing 85 and 100 lb. rails by new rails of 115 lb. over a length of 640 miles, and purchasing equipment and tools to the value of £620,000. The period for completion of the work is estimated at five years.

In approving the project the President added that in view of the urgent need to improve the Rio suburban system, the Central Railway was authorised to call immediately for tenders for the supply of electric units, up to 200 train-units, and complementary equipment, as we recorded in the Contracts & Tenders column of our March 14 issue.

Brazil-Bolivia Railway

By the end of 1951, the Brazil-Bolivia Railway had penetrated 472 km. into Bolivian territory, to a point 178 km. from the terminus at Santa Cruz de la Sierra. The line is being built in accordance with the first of two complementary treaties, signed by the two governments in 1938. The second treaty provides for the organisation of mixed Brazil-Bolivian companies to exploit Bolivian oil reserves in an area of 116 sq. miles, between the rivers Ichilo and Parapeti. Diplomatic notes were exchanged in January to determine the rights and obligations of the companies and fix the freights on crude oil and refined products to the Brazilian frontier and to a point on the Paraguay River. The railway will eventually be extended to Cochabama, bringing this hitherto isolated region in contact by rail with La Paz and the Pacific ports of Antofagasta, Mollendo and Arica.

North-Western Railway Extension

The 78 km. extension of the North-Western of Brazil Railway from Porto Esperança to Corumba was opened at the beginning of February. This short section entailed the building of a 2,009 m. bridge in reinforced concrete across the River Paraguay and of two shorter bridges over the swamps bordering the river. It connects the capital of Mato Grosso by rail with the rest of Brazil, serves the important iron and manganese region of Urucum and joins at Corumba the Brazil-Bolivia Railway.

Construction of the North Western line, the only line that traverses the country from east to west, was begun at Bauru, in Sao Paulo, in 1906. It crosses the State of Sao Paulo in a north-westerly direction and enters Mato Grosso at Tres Lagoas, on the right bank of the Parana River. From Tres Lagoas it continues across Mato Grosso to Campo Grande and thence to Porto Esperança, on the left bank of the Paraguay River, 1,600 km. distant from Bauru.

The track was originally made up of five different weights of rail, ranging from 37 to 20 kg. per metre, thereby greatly hampering the working of the

line. In 1945 the company began relaying the track with 37 kg. rails from Bauru to Araçatuba, and with 34 and 32 kg. rails, respectively, over the next two sections, to Tres Lagoas and Porto Esperança. Traffic has fallen off since 1946, because of competition from parallel roadways and declining agricultural production in part of the zone served.

At Bauru the North-Western connects with the Paulista and Sorocabana systems. From Campo Grande a branch, begun in 1930, is being laid to Ponta Pora on the Paraguayan frontier, a distance of 304 km. It is expected to be completed in June and will facilitate commercial exchanges between the two countries *via* Concepcion. Navigation over the Paraguay River is frequently interrupted above the Rio Apa in the dry season, precluding stable communications with Paraguay *via* Porto Esperança.

SPAIN

Fiat-Built Diesel Trains

The Fiat Works at Turin has completed the first of the twenty diesel articulated sets for the Spanish National Railways. It has undergone trials on the Turin-Bardonecchia and on the Turin-Alba lines of the Italian State Railways.

The set consists of motor coach, trailer, and motor coach. Each motor coach is equipped with a 12 horizontal-cylinder diesel engine developing 480 h.p., built by the Officine Meccaniche of Brescia. The engine is fitted under the floor. The transmission is mechanical, with three-disc friction drive and five speeds. The maximum speed is 75 m.p.h.

The motor coaches have a large luggage compartment and 64 seats. The central trailer has 64 seats, a bar room and a kitchen. Meals are served on small tables similar to those used in aircraft. The complete set has 174 seats and is 84 m. in length. Air-conditioning equipment is provided throughout. The interior covering of the walls is in Plastirin, a plastic material manufactured by RIV (Officine di Villar Perosa), a subsidiary of Fiat.

While on trial in Italy, the set has been mounted on standard-gauge bogies, for which broad-gauge bogies will be substituted when it is shipped to Spain.

GREECE

New Railcars Delivered

Four of an order of standard-gauge twin-unit railcar sets built by Maschinenfabrik Augsburg-Nürnberg for service on the Athens-Piraeus line of the State Railways arrived at Athens early in March after having made the journey from Western Germany through Austria and Jugoslavia to Greece by their own power.

In February, the first two of a batch of fourteen metre-gauge railcars ordered by the Thessalian Railways from S.A. Ernesto Breda completed trials in Italy and were despatched to Greece through Jugoslavia. The railcars are being supplied on reparation account, although their construction was financed with E.R.P. funds.

IRELAND

G.N.R.(I.) Acquisition

On March 13 the Minister of Industry & Commerce said that he was unable yet to state when legislation on the acquisition of the G.N.R.(I.) would be introduced, but hoped that it would be passed before the summer recess of the Dublin Parliament.

Kingsbridge Goods Station

Kingsbridge Goods Station, Dublin, C.I.E., is being modernised. In the store, two new doors are to be added and canopies will be erected over three existing doors to allow unloading during bad weather. Two cranes and bollards at the east end of the store will be removed, enabling full use of the delivery platform to be made. The present cartage office inside the store will be removed and new offices built away from the station. The space vacated will be used to relieve congestion inside the store.

Killarney Service

The summer service of C.I.E., which comes into force on June 30, will include a train for Killarney leaving Dublin at 11.45 a.m., calling at Thurles and Mallow, and reaching Killarney at 4.12 p.m. The train will also serve Farranfere and Tralee, giving a connection to Valentia at Farranfore.

The return service will be at 11 a.m. from Killarney, giving an arrival in Dublin at 3.20 p.m.

St. Patrick's Day Celebrations

Among the arrangements made by the G.N.R.(I.) in connection with the St. Patrick's Day celebrations in Dublin was a special train to Belfast to "See Belfast at Work." There were special trains from Belfast to Dublin. Both the C.I.E. and G.N.R.(I.) were represented in the Industrial Parade which took place in Dublin on St. Patrick's Day. The C.I.E. contribution was a tableau exhibiting the Radio Train, and the G.N.R.(I.) showed two new road vehicles for the transport of edible oils and cement in bulk.

Catering Service

Four members of the Swiss Dining Car Company have arrived in Dublin for six months' training with C.I.E. They will work on the main-line trains. Four members of C.I.E. are already training in Switzerland under a staff exchange scheme. It is hoped to bring dining and restaurant car services on C.I.E. trains up to a high standard as a result of the scheme.

Fiat-built articulated three-car diesel unit for the Spanish National Railways

Further Notes on Locomotive Modernisation in Argentina

By John Poole,

Formerly Chief Draughtsman, Buenos Ayres Western Railway and Technical Assistant, B.A.G.S. and B.A.W. Railways

THE article by Mr. D. S. Purdom in the October 10, 1951, issue was of great technical interest. In the following notes the writer hopes to show that the Mechanical Departments of the former British-owned railways in Argentina always had in view the importance of keeping the locomotive stock up to the requirements of the day —and to those for some time ahead. It was never the policy to scrap an unsatisfactory class if by any means it could be adapted to earn dividends.

The Buenos Ayres Great Southern was early in the field with this form of modernisation. In 1885-1886 it converted two old "Crewe" type 2-4-0 saddle tanks, built in 1867 by the Canada Works, into 4-4-0 side tank engines to assist the original eight Stephenson tanks of 1865 with the fast-growing suburban traffic. A 4-4-0 tender engine of rather greater power was also rebuilt as a 4-4-0 side tank engine at the same time.

Converted Webb Compounds

In 1895, the Buenos Ayres Western Railway was confronted with the problem of making some use of two Webb compounds of 1886, which had done almost no work since imported by the Buenos Aires Provincial Government Railway. These were almost of the "Dreadnought" type, but with leading bogie wheels only 2 ft. 6 in. in dia. Because of the heavy axle loading caused by the l.p. cylinder these naturally gave rise to constant hot-box trouble; the usual Webb compound idiosyncrasies such as refusal to start were much in evidence. The boilers and tenders were in good condition, and it was decided to build new engines around them and such other parts—bogie wheels, axles, cabs, platforms and boiler mountings— as could be worked in. There were spare wheels and axles, with motion and side and connecting rods of a class of Baldwin 2-6-0 of 1888, but no cylinders or frames. Mr. T. Chubb, then Locomotive Superintendent at the old Tolosa Works, decided to forge new bar frames and cast cylinders to suit; the cylinders were of the usual Baldwin style, but instead of the boiler saddle a flat platform was arranged to take the English style of smokebox. The forging of the frames, quite a problem for a small workshop, as Tolosa was in those days, proved a great success, and the resulting engines worked in the link with their Baldwin half-sisters until cut up in 1922.

Between 1896 and 1904 the Buenos Ayres Great Southern modernised 25 standard simple 4-4-0 passenger engines which had been built by Beyer, Peacock between 1883 and 1890. New and larger boilers with a higher pressure were fitted, and enlarged compound cylinders brought them up to date. As there were twenty-five boilers, and sets of cylinders available from the rebuild, all in excellent condition, it was decided to buy 18 sets of wheels, motion, tanks, and cabs in which they could be used up. The result was 18 quite modern 2-6-2 goods tanks which were urgently wanted at this time.

During the same period the B.A. & Rosario Railway converted ten simple and ten compound 4-4-0 passenger engines to 4-4-2 suburban tanks, many of which lasted up to 1931. At about the same time ten wood-burning mixed traffic 2-6-0 engines were converted to compound and later given much larger boilers.

Except for one engine on the Entre Rios and six on the Northwest Argentine, no further engines on the British lines were converted from compound to simple until 1922, when Mr. Sacaggio, the Chief Mechanical Engineer of the B.A.G.S.R., converted ten 4-6-0 goods engines of class "12c" and 32 4-6-0 passenger engines, class "12A." The former were Beyer, Peacock goods engines of 1889, with cylinders 18 in. and 26 in × 26 in. and 4 ft. 7½ in. coupled wheels, and bogie tenders; these engines were outclassed by 1922 and Mr. Sacaggio converted them to shunting engines by the simple expedient of bushing the l.p. cylinder down to 18 in., using a rib bed bush. It was doubtless the pattern for this which was used by Mr. Purdom for the conversion of the 2-6-0 mentioned in his article, but although the conversion was successful for a shunting engine, it seems likely that the large clearance on the r.h. side would lead to high consumption when applied to a passenger engine.

Compound to Superheated Simple

The "12A" class were 1906-07 engines with cylinders 19 in. and 27½ in. × 26 in. and 6 ft. coupled wheels. When they were superheated in 1922 it was decided to simplify them, and new 19 in. × 26 in. cylinders with 12 in. piston valves were made; the old valve gear with a travel of about 4 in. was retained. These engines had frames only 4 ft. 4¼ in. apart, the centres of frames and journals being nearly coincident. This design was introduced by Neilson on the Central Argentine in 1884, and was retained for all its main-line engines. It was also used on all 4-6-0 locomotives of the B.A.G.S. and all 2-8-0, 4-6-0, and 4-6-0 locomotives of the B.A. Western (except nine Vulcan four-cylinder compounds of 1907-10). Its application to the Bulleid "Pacifics" and the latest British Railways 4-6-2 types is therefore nothing new!

It will be realised that with the frames in this position the distance between cylinder and valve chest was necessarily great, giving a large clearance volume—of great value in a compound but quite the reverse on a simple. This was aggravated by the use of 12-in. piston valves instead of the more usual 10 in. with this size of cylinder. The result was a more powerful but still sluggish engine, and to cure this Mr. Rae fitted Gooch gear with 1¼-lap valves. Any inferiority to the "12D" class after this conversion can be attributed to the large clearance, but is also largely psychological, as in the opinion of the average Argentine driver, an engine with outside valve gear must necessarily be superior to one with the motion inside!

Valve Setting Experiment

Up to 1925 the Buenos Ayres Western had converted many of a similar type to the above (but with 5 ft. 8 in. coupled wheels) to superheaters. The h.p. cylinder with its flat balanced valve was replaced by another of the same dimensions but with a 10-in. inside admission piston valve; the eccentric rods on that side were crossed and the eccentrics shifted. Although they were much improved in their superheated state there was considerable difficulty in obtaining a satisfactory valve setting on the piston valve side, and the engines were rather sluggish. In that year a locomotive of this class arrived in shops with a broken l.p. cylinder and it was resolved to convert it to simple and at the same time to try to improve the valve setting. A piston valve cylinder, similar to that already in use on the r.h. side, was fitted in place of the l.p. cylinder, but as this cylinder had to be turned end for end and the slope of the motion was 1:14 some "dodging" was necessary to locate the new bolting, which in the original design—and for top and bottom flanges—went through the bogie centre casting and the smokebox bottom. It was necessary later to fit a strong angle iron reinforcement to take this bolting.

In the new valve gear the lap was increased from $\frac{7}{8}$ to 1 in., and the motion redesigned on the Walschaerts model; the expansion link, now reversed, was carried on a combination lever driven by one eccentric and was itself driven at one end by the other eccentric. The original intermediate valve rod, with some arching, now became the radius rod. Another engine in shops had valve gear similarly altered but remained a compound.

The results of these conversions were only fairly satisfactory. It is true that a much better valve setting had been obtained, and the compound was better

than others of the class not altered. The simple, although much more powerful, was still rather sluggish, and the fuel consumption was higher than that of the compounds.

When the late Mr. J. W. H. Rea became C.M.E. in 1928 he was at once confronted by the problem of increased loads of passenger trains. The 4-6-0 engines had been chiefly used on cattle trains and the slower night passenger trains but there was now a general acceleration, so that the 2-6-0 engines of class "7s," which had done the bulk of the work, were quite outclassed. Even the slow night trains were becoming too much for the 4-6-0 class. The writer, then Chief Draughtsman, was instructed to get out schemes to use the good boiler potential of the 4-6-0 engines, at the same time using as much of the material as possible.

Three schemes were proposed: (*a*) based on the already converted simple, but with long-travel Stephenson gear; (*b*) the original gear set for 52 per cent. maximum cut-off, with small starting ports to give the effect of 85 per cent. at slow speeds; and (*c*) a long-travel Gooch gear with 65 per cent. cut-off in full gear with auxiliary ports as in (*b*) to give 90 per cent. cut-off at starting. The last-mentioned scheme was adopted. In the next few years 15 engines were thus converted with great success and it was found possible to work the heaviest and fastest trains with punctuality and economy.

The same drawings were used for the conversion of the B.A.G.S. Railway classes "12A" and "12F," as mentioned by Mr. Purdom. A later batch of 15 B.A.W.R. engines was rebuilt with entirely new cylinders and outside Walschaerts gear.

Successful Atlantic Modernisation

Apart from an extensive superheating programme, the modernisation work on the Buenos Ayres & Pacific Railway consisted of the conversion between 1912 and 1914 of fourteen express engines of the 4-4-2 type, with 6-ft. 8½-in. coupled wheels, to the 4-6-2 type; the alteration entailed new frames and trailing coupled wheels, and radial wheels and axles, and the raising of the boiler centre. These engines were later superheated, retaining their balanced slide valves, and still are one of the principal main line passenger classes. In 1926 the same company remodelled 18 of a class of 24 rather feeble suburban passenger engines of the 4-4-4 tank type, with 18-in. × 26-in. cylinders and 5-ft. 11-in. coupled wheels. New frames to accommodate the 2-6-4 tank arrangement were bought and the boilers were superheated. New piston valve cylinders, 19 in. × 26 in., were supplied. As thus converted they are still the mainstay of the suburban passenger service.

The Central Argentine, apart from a limited superheating programme, undertook little modernisation. Among the heavier superheating work must be included a class of ten 4-6-2 mixed-traffic locomotives with 19-in. × 26-in. cylinders with inside balanced valves. When superheated they were supplied with new outside cylinders, 21 in. × 26 in., with piston valves driven by Walschaerts gear. Six similar compounds with inside valve cylinders 19 in. and 27½ in. × 26 in., which were also superheated and given piston valve cylinders 21½ in. and 31½ in. × 26 in., also with Walschaerts gear. As originally built in 1909, these locomotives were simply the standard 4-6-0 type fitted with greatly enlarged boilers with a grate area of 29·5 sq. ft.; a trailing radial axle was added to carry the extra weight. As the boilers of this prototype, with 25 sq. ft. of grate area, were capable of supplying steam to the cylinders under all conditions it is difficult to see the reason for the 4-6-2 design.

B.A.W.R. 4-8-0 Design

In 1930, the writer, under the direction of the late Mr. J. W. H. Rea, designed a class of 4-8-0 mixed-traffic engines for the heavy night passenger trains and for the fast fruit trains between Colonia Alvear and Buenos Aires. These engines had 5-ft. 8-in. coupled wheels—certainly the first of this size on a 4-8-0 in South America and possibly in the world.

The design was worked out in detail in the Liniers drawing office of the B.A.W.R., and the final dimensions of the cylinders were 19½ in. × 28 in. A boiler pressure of 225 lb. per sq. in. and cast-steel bar frames were specified. The cylinders were carefully designed, particularly the exhaust passages, which were carried from each end of the valve chests, and over the bar frames, being curved gently up to meet at the base of the exhaust pipes at the point where the two half-saddles met.

As there was difficulty in obtaining the cast-steel bar frames in England, plate frames were substituted by the consulting engineers. With this design the weight limits were exceeded, so the boiler pressure was cut down to 200 lb. per sq. in. and the cylinders were enlarged to 20½ in. dia. This new design entailed sharply bent exhaust passages meeting at the point where they passed through the plate frames, but with the relatively slow services on the B.A.W.R. no particular difficulty was encountered.

When Mr. Rea became C.M.E. of the B.A.G.S. and B.A.W. Railways he based his new engines on these B.A.W.R. (class "15") machines, using the same boilers and motion. The pressure was raised to 225 lb. and the cylinders were reduced to 19 in. in the 4-6-2 type (class "12K") and to 19½ in. in the 4-8-0 (class "15A"). Four of the 4-8-0s were fitted with Caprotti gear.

At the same time, underframes and motion of the 4-6-0 arrangement were brought out for new intermediate classes to use existing boilers—cylinders and wheels were duplicate with those of class "12K"—but in these engines (classes "12G" and "12H") the pressure was only 200 lb. per sq. in.

The writer travelled many thousands of miles on the footplates of these engines on trains varying from the Mar del Plata expresses to heavy goods, but in passenger service he found, as he reported at the time, that they could all "climb like cats" and make up time on the heavier grades. When really fast work was required on the level or on downgrades they seemed to suffer from "tied legs," with the notable exception of the Caprotti engines, which showed themselves capable of speeds as high as those attained by the 6-ft. 6-in. express engines of class "12E."

In conclusion, the writer would be interested to know what was done to the valve gear of the recently converted class "12" engines, as he understands that the travel has not been altered. Unless some form of limited cut-off has been embodied it appears that these engines can never give even approximately the results given by the Gooch gear engines, as no possible alteration of the blastpipe and chimney can eliminate the effects of back pressure at the ports. However that may be, Mr. Purdom is to be congratulated on the ingenuity displayed in difficult circumstances, and he has shown himself a worthy successor of some notable Argentine locomotive engineers.

NEW WORKS AT MALLAIG HARBOUR.—Extensive repairs are about to be undertaken by the Scottish Region to the inner berth wall and to the fish wharf at Mallaig Harbour, Inverness-shire. The work consists of the construction of a new wall in front of the existing wall and the complete renewal of the seaward end of the fish wharf. It will take almost two years to complete the schemes, which are estimated to cost some £80,000. H. M. Murray & Co. Ltd., Glasgow, is the contractor.

PROFESSIONAL ENGINEERS' APPOINTMENTS BUREAU.—The board of the Professional Engineers' Appointments Bureau in submitting its annual report for 1951, shows considerable progress in the work of the Bureau. The increased number of placings together with the highest total for appointment fees on record, is the measure of the success with which it has been possible to satisfy the demands of both engineers and employers. Offers of employment far exceed the number of actual appointments made due to the present abnormal demands for engineers with specialised experience. Over 10 per cent. of those placed were over 50 years of age. The policy of the Bureau is to submit, whenever possible, every engineer, irrespective of age, unless the employer specifically restricts the age limit. The nominations to vacancies were higher than in previous years, and the number of inquiries from employers has been well maintained. The total vacancies were 1,070, of which 314 were for civil engineers, 503 for mechanical engineers, and 253 for electrical engineers. Overseas vacancies are approximately 30 per cent. of the total notified, the majority of which are for the Middle East, West and East Africa, India and Pakistan.

New Johannesburg Station, South African Railways

Construction of fourth structure on same site to keep pace with the requirements of the rapidly-growing city

THE first part of the new passenger station at Johannesburg, South African Railways, is now in operation, and the old station is no longer in operation. The new station is the fourth to be built on the present site in just over 60 years.

In 1894, the construction of the first station of any pretentions was begun. This work consisted of extended track layout and new buildings. The station building consisted of an iron and glass structure imported from Amsterdam where it had formed part of the 1896 Exhibition. This station, which provided offices, a restaurant and refreshment and waiting rooms, was completed in 1897.

The rapid development of the city rendered this station inadequate by 1920 and planning was begun of a new enlarged station. Work was begun by 1926 and the new scheme was completed by 1932.

The new station had eight platform faces, seven for passenger traffic and the other for van traffic. Access to the platforms was provided by subways for passengers and an overhead gantry and lift system for luggage and parcels. At the same time the old Braamfontein Station was remodelled to provide coaching and servicing yards for passenger trains and a marshalling yard for goods trains, a locomotive depot and, in 1936, when the Reef passenger service was electrified, an electric running shed.

By 1942 this station had already become inadequate to meet the city's needs

Widening of cutting east of station and lowering of track formation

Part of the new station, intended for main line trains only when the rebuilding scheme is completed

and the question of building another new station was investigated jointly by the South African Railways and the Johannesburg City Council. Mr. Gilbert Szlumper, then Director-General of Supply Services, British Ministry of Supply, was invited to submit a report on the matter. It was eventually decided to proceed with the construction of a new station on a site to include the whole of the old station as well as the whole of the Wanderers Sports Ground area which abutted the premises on the northern side.

New Scheme Begun

The new scheme, of which the first portion has now been opened to traffic, was put in hand in April, 1946. It provides a well-planned layout giving both the City Council and the railway greatly improved facilities. Access from the central business area of Johannesburg to its northern suburbs has always been a problem, but now, by means of lowering the tracks below street level, provision has been made for a total of 15 road crossings over the 3½-mile central portion of the railway which passes through the city.

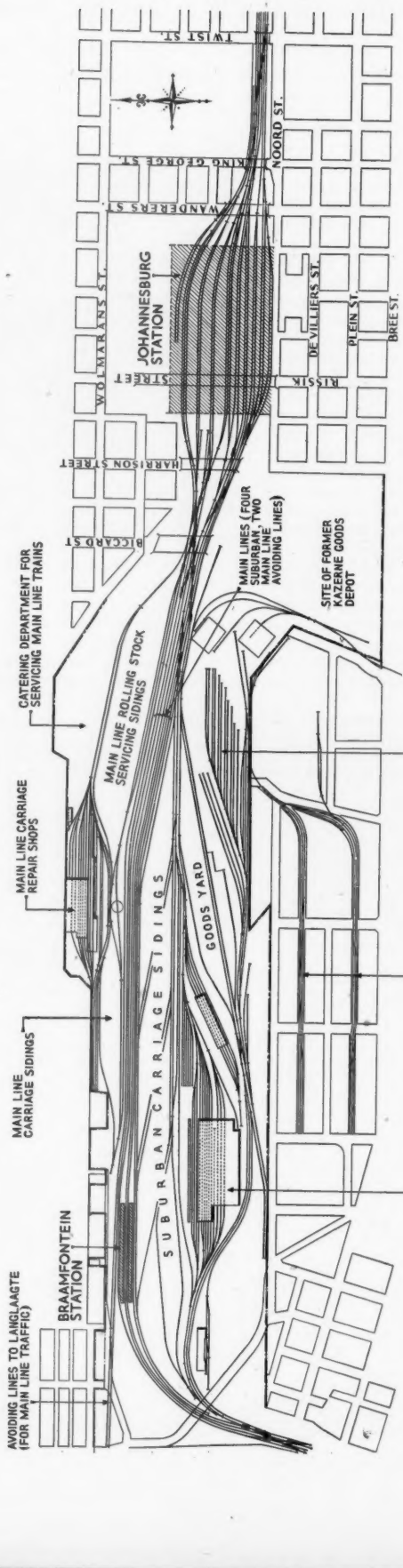
When completed, the new station will have twice the platform accommodation of the old one—18 platforms in all. Ten will be suburban traffic platforms, six main line, a through van platform and two van dead ends. In addition, there is provision for three through tracks in the station, clear of the platforms, for the passage of goods trains and light engines.

The main line platforms are being built wide enough to enable them to be divided longitudinally if necessary at a future date, to provide additional platform accommodation. The new platforms are 14 ft. below the level of the old platforms. Over the entire track layout, and parcels depot, a reinforced concrete deck slab is to be constructed at approximately the normal city street level.

The ultimate deck slab will cover an area of 1,080 ft. along the length of the platforms, by 880 ft. across the width of the track area. In the meantime only part of this slab is being constructed until all steam traction is removed from the central Reef area and smoke can be eliminated.

The deck slab will carry most of the public facilities at street level above the tracks. There will be four concourses and their forecourt areas. The concourses will straddle the tracks which they serve, and European and non-European passengers will have separate facilities. Escalators and staircases will give access to the platforms from the concourses above.

The parcels depots are extensive, totalling 62,000 sq. ft. in area. They are connected to the ends of the main line platforms by a subway system which enables luggage and parcels to be taken to and from main line vans without interfering with passengers on the platforms.



Layout of western approach to Johannesburg Station. The new platforms occupy part of the site bounded by Rissik, Wolmarans, and Wanderers streets

Work has advanced to the completion of stage I of the scheme, which amounts to approximately the same platform accommodation as the old station in the Wanderers Ground area, but 14 ft. below the old track level. The portion now opened occupies the site of the future main line platforms, parcels depots, and northern approach roads, and a considerable amount of the final work for the permanent station is included in it. The structures comprising the old station are now being demolished preparatory to the lowering of the site to the level of the new station. When this has been done and the new suburban tracks are brought into use, the stage I portion, now in operation, will be remodelled to carry main line traffic only.

The estimated cost of the entire scheme with all the offices and public facilities is approximately £8,000,000. So far, £2,700,000 has been spent. The entire scheme involves 1,400,000 cu. yd. of excavation, of which 880,000 cu. yd. have been completed. Reinforced concrete to the amount of 80,000 cu. yd. has so far been laid.

The new station is being built under difficult conditions, caused by its situation in the middle of a busy city. Traffic, railway and public, had at all times to be allowed to retain normal access over the works, and a large network of services, such as water and gas mains, sewers, drains, power and telephone cables, had to be maintained and deviated where necessary. All these considerations have added to the complexity of the work and the difficulties of planning this major project of reconstruction.

General view of new platforms; original station on left

RECORDING INDUSTRIAL INFORMATION. — Measures to stop waste of time and money in industry through ignorance of facts already established and published formed the subject of a conference on "Information Services and Industry" held in London on March 18 under the joint auspices of the Industrial Research Committee of the Federation of British Industries and the Association of Special Libraries & Information Bureaux. Sir Alfred Egerton, F.R.S., Head of the Department of Chemical Engineering & Applied Chemistry, Imperial College of Science & Technology, headed the team of speakers, which included Dr. J. H. Chesters, United Steel Companies Limited, Dr. J. Farquharson, Beecham Research Laboratories Limited, and Mr. L. Wilson, Director of "Aslib." The conference was held under the chairmanship of Mr. A. H. Wilson, F.R.S., Chairman of the F.B.I. Industrial Research Committee. After lunch, delegates were conducted round information departments of firms in the London area.

PORTABLE ELECTRIC TOOLS. — Displays and demonstrations of a complete range of electric tools will take place on the stand of Wolf Electric Tools Limited during the British Industries Fair at Castle Bromwich. Units to be shown include portable drills, screwdrivers, bench and pedestal grinders, sanders, hammer kits and other tools. A range of engine reconditioning equipment to facilitate maintenance work on valves will also be shown. A demonstration of the Wolf Cub portable drill will emphasise the many purposes for which this tool is suitable when used in conjunction with various types of adaptor equipment. In addition to its basic function, it can be used as a power unit for a wood turning lathe, can be converted into a 4-in. circular saw bench, or is suitable for use as a bench drill, a portable polisher, grinder or sanding machine.

Rolling Stock for Ceylon

Third class coaches with bodies of timber frame construction and all-welded underframes

WITH a view to overcoming the shortage of third class passenger stock the Ceylon Government Railway placed a contract for the supply of 65 third class passenger coaches with the Metropolitan-Cammell Carriage & Wagon Co. Ltd. Required for the 5 ft. 6 in. gauge, accommodation is provided for 85 passengers, and is arranged in two compartments incorporating a separate ladies' compartment for ten passengers.

Third class carriage with all-welded underframes for Ceylon

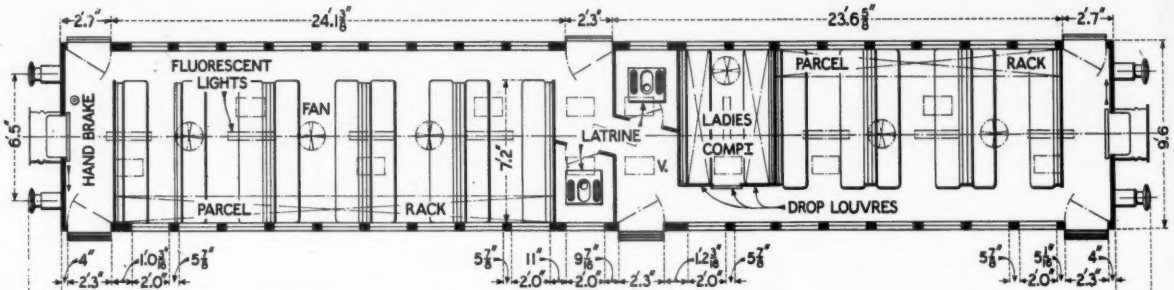


Diagram showing the interior arrangements

The principal dimensions of the coaches are as follow:—

Gauge	5 ft. 6 in.
Length over headstocks	55 ft.
Width over side panels ...	9 ft. 6 in.
Height, rail to roof	12 ft. 9¼ in.
Tare weight	29 tons 6 cwt.

The underframes are provided with Sheffield Twinberrow bogies having a wheelbase of 8 ft. and 13 ft. 6 in. over bogie headstocks and of all-welded construction. The underframes are also of all-welded construction, principally of channels and angles. Solebars and headstocks are of channel section; the solebars are 10 in. × 3⅜ in. × ½ in. thick, those for the headstocks being 12 in. × 3⅞ in. × ¼ in. thick. Inner longitudinals extend the length of the underframe between the bolster stiffeners, and consist of channels 9 in. × 3 in. × ⅜ in. thick, while the underframe headstocks are further strengthened by diagonal bracings consisting of 10 in. × 3⅜ in. × ½ in. thick channels, extending from the headstocks to the bolster stiffeners.

To withstand buffing loads the underframe solebars, diagonals, and headstocks are further reinforced by gusset plates ⅜ in. thick, the whole forming a box section behind the buffers. Trusses consisting of 3½ in. × 3½ in. × ½ in. thick angles are welded to the solebars. To provide additional strength, truss posts are welded to the solebars and the bottom of the trusses; the centre of the truss posts is 8 ft. 9 in., and provides space for carrying the accumulator boxes. The truss posts are tied transversely by 2½ in. × 2½ in. × ⅜ in. thick angles. The bolsters are of box section. Carriage oscillation is controlled by bogie side bearers spaced at 5 ft. 3 in. centres.

Carriage Body Design

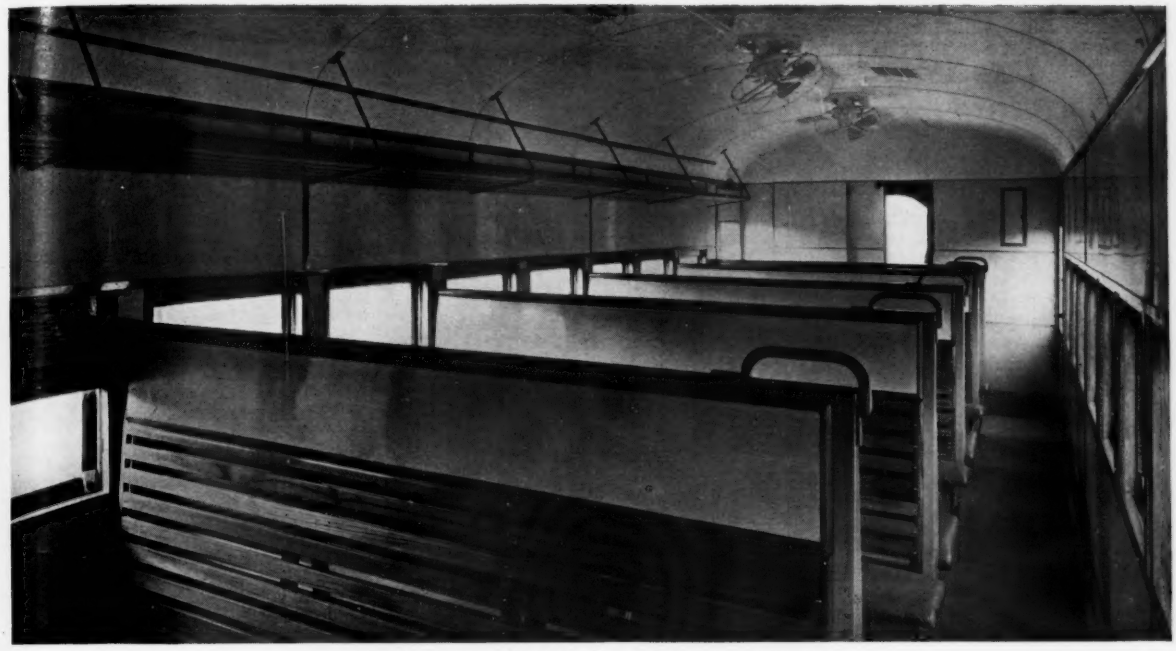
The body structure is entirely of timber construction and of conventional design, the various members being secured together by mortise and tenon joints reinforced by angle pressings or bent plate knees. The main floor-members consist of teak bottom sides 9 in. wide × 2⅞ in. thick and secured to the underframe by ¾ in. dia. c.s.k. holding down bolts; these bolts pass through rubberised cork body pads placed between the floor members and the underframe.

The floor is of 1¼ in. thick boards with an overlay of linoleum. The body pillars at light openings are of teak 4 in. × 1¾ in. secured to the bottom sides by angle pressings. Pillars at doorways are of larger cross-section. The

cantrails, also of teak, are 4½ in. wide × 2⅝ in. thick. The body panels are of close annealed mild steel 16 B.G. thick, the securing holes are press countersunk. Seating is arranged in two open compartments, and Midland type vestibules provide inter-communication between carriages when coupled.

Provision is made for 85 passengers, and includes a separate compartment for ten females; communication with the main compartment is by a sliding door. The interior lining is generally of Warerite wall panels ⅛ in. thick plastic faced with linen fabric weave pattern. A small quantity of blockboard is also used faced with ·005 in. thick plastic. The dado boards to a depth of approximately 8⅜ in. from floor level are of tempered Masonite finished in a green shade of enamel. Seats are of timber slats, with iron framing with headrests of plastic. Parcel racks are also of timber slats with iron framing supports painted green. Lift-up lights and teak louvres are fitted, secured in various positions by gravity catches locating in 16 gauge stainless-steel racks. The roof carlines are of 1½ in. × 1½ in. × ⅛ in. mild steel, and are secured to the cantrails by ⅜ in. dia. bolts. To provide a free run-off for water, the outer edge of the cantrail is shaped to the roof contour, the roof overlapping the side of the carriage by ½ in. The roof sheets are galvanised, and 16 B.G. thick, and are welded to the carlines; the ceiling is finished in Sundeala $\frac{5}{16}$ in. thick and finished in an off-white. The seat frames are finished in a pleasing shade of green and interior mouldings are of a similar finish.

All metallic fittings are stove-enamelled and lights and louvres are finished in a synthetic clear varnish. The electrical equipment is by J. Stone & Co. (Deptford) Ltd. Fluorescent lighting is provided, supplied with a.c. from a 24-120 V. converter. Exterior lighting is also provided, together with illuminated destination indicators. Six Rotomatic oscillating fans are fitted in the interior and Airvac ventilators are provided on the roof. Two separate lavatory compartments are arranged near the centre of the carriage. Water supply is by an underframe tank of 150 gal. capacity, with Stone's electrically operated water-raising apparatus. The carriages are fitted with vacuum braking, a handbrake is also fitted, operated by handwheels, one on each side of the underframe. A rachet is fitted near the vestibule entrance at one end of the carriage; Weslak slack adjusters are provided.



Interior view showing the seating arrangement

Principal Contractors

The following is a list of the principal contractors who supplied materials for the new stock:—

Wheels and axles ...	Taylor Bros. & Co. Ltd.
Springs	English Steel Corporation Limited
I.R. springs... ...	Geo. Spencer, Moulton & Co. Ltd.
Brake equipment ...	Westinghouse Brake & Signal Co. Ltd.
Castings	Robert Hyde & Co. Ltd.
Lighting	J. Stone & Co. (Deptford) Ltd.
"A" quality Sundeala ceiling panels	G. D. Peters & Co. Ltd.
Plastics	Insulation Equipments Limited
Altro safety treads	Adamite Co. Ltd.

BELGIAN CONGO EXTENSIONS FORESHADOWED.—An agency message from Brussels states that the Belgian Minister of Colonies has said that the rail link between Port Francqui (Lower Congo) and the port of Matadi must be built. Construction work would require about five years to complete. He stressed that the new line was essential, because the economic development of the Congo was proceeding at four times the speed foreseen in the 10-year development plan, and ore exports from the province of Katanga (mainly copper ore), now some 500,000 tons a year, would reach 800,000 tons in a few years. The Belgian Congo could not guarantee minimum import and export tonnages to foreign railway companies serving the border regions of the colony.

TRANSPORT OF BRITISH RAILWAYS VESSEL FROM LOCH AWE TO CLYDE.—It is announced that a start has been made with preparing the 106-ton motor vessel *Countess of Breadalbane* for transfer from Loch Awe to the Firth of Clyde, where it is to be used to augment the Clyde Coast steamer services. The transfer of the vessel will be partially overland. To facilitate handling the superstructure is to be temporarily stripped. The ship will then be manœuvred on to a cradle mounted on bogies which will carry it to Loch Fyne where, near Inveraray, the ship will enter the sea. Afterwards it will be towed to Dumbarton for overhaul at the Leven Shipyard of William Denny & Bros. Limited, where the vessel was built in 1936. The vessel cannot sail direct to the Clyde from Loch Awe because of its size, it is 93 ft. long with a beam of 18 ft. It will be necessary to strengthen a number of small bridges and culverts on the roads *en route*. The *Countess of Breadalbane* is expected to be available in May.

Gas Turbine Locomotive Tests on Hemerdon Bank

Stopping and restarting with loads of up to eighteen coaches on heavy gradients

A SERIES of trials carried out recently with the Metrovick gas turbine locomotive of the Western Region on Hemerdon Bank, near Plymouth, has demonstrated the capacity of the equipment for dealing with the exceptional conditions imposed by stopping and restarting heavy loads on a gradient of 1 in 42.

A profile of the section of line over which the runs were made is reproduced herewith. The locomotive was described in our February 1 issue.

Five trials were carried out. On the first of these a train of 14 coaches (478 tons) was taken out of Millbay Station and brought to a stand at Plympton up starting signal. It was then restarted, and again brought to a stand at the telephone box at the middle of the incline. Restarting from this point on the 1 in 42 gradient proved more difficult, and on two or three attempts the traction motor contactors opened on overload. Eventually, however, the train was restarted successfully and taken to the top of the bank without further difficulty.

Overload Relays Adjusted

While the coaches and locomotive were being remarshalled for the second trip with 17 coaches, the setting of the overload relays for the traction motors was increased from approximately 1,150 amp. to 1,400 amp. At this new setting the 17 coaches (577 tons) were taken into the bank from Tavistock Junction, again stopped at Plympton and subsequently at the telephone box, from both of which points the locomotive restarted the train without any difficulty whatever.

Later in the day it had been intended to take the time with 17 coaches from starting at North Road to passing Hemerdon box, and the train was taken to Millbay Station for this run. After restarting from North Road, however, a signal check at Plympton defeated the purpose of the trial.

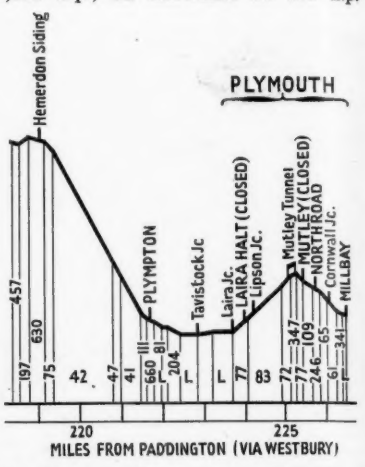
Restarting with 609 Tons

For the next run the load was increased to 18 coaches (609 tons) and the train started from Tavistock. Stops were made at Plympton and at the telephone box in the middle of the bank. From each of these stops a restart was made with conspicuous ease.

On the fifth and final trip the 18 coaches were again taken from Tavistock Junction to Hemerdon box without stopping; the speed passing Hemerdon box was approximately 40 m.p.h., and the time of the ascent from Plympton box to Hemerdon box was 8 min., the minimum speed on the bank being 15 m.p.h., rising to 18 m.p.h. at the summit.

The foregoing tests followed the successful runs with the gas turbine locomotive on trains of 12 and 17 coaches from Swindon to Plymouth on March 4 and 6. Together they have demonstrated effectively the capacity of this locomotive to handle these exceptionally heavy trains over the worst banks on the West of England route from Paddington.

The results confirm the adequacy of design both of the gas turbine and of the electrical equipment of the locomotive, of which the recovery on the last run to 40 m.p.h. so soon after completing the stiffest section of the bank is an impressive example. The locomotive has a maximum tractive effort rating of 60,000 lb. From the turbine output of 3,000 h.p., an allowance of 150 h.p. provides for the loss in reduction gear and auxiliary equipment, leaving an input of 2,850 h.p. to the traction generators.



Gradient profile of the line from Plymouth Millbay to Hemerdon on which the tests were carried out

An electric transmission efficiency of about 86 per cent. is achieved over most of the speed range, corresponding to 2,450 h.p. at the rails. A performance diagram published in our February 1 issue showed balancing speeds on various gradients with an 18-coach train of 650 tons, the figure for this load up 1 in 50 being 23 m.p.h.

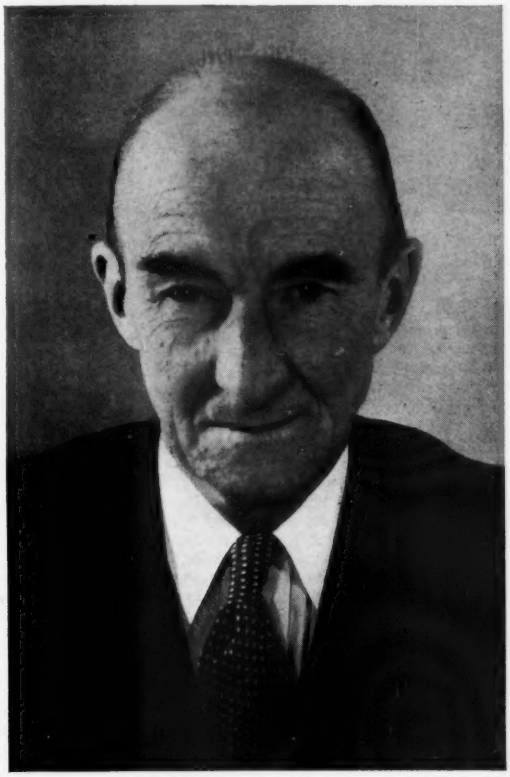
The Metrovick gas turbine locomotive of the Western Region running alongside the river estuary at Teignmouth during a recent trial journey

RAILWAY NEWS SECTION

PERSONAL

The Queen, by Letters Patent under the Great Seal of the Realm, has conferred the honour of Knighthood upon Mr. Henry Telfer Low, C.B.E., Vice-Chairman of the Railway Board, Southern Rhodesia.

Mr. C. M. Cock, M.I.Mech.E., M.I.E.E., A.M.I.E.(Aust). M.I.Loco.E., who has been elected President of the Institution of Locomotive Engineers for 1952-53, is General Manager of the Traction Department of the English Electric Co. Ltd., and a member of the board of the English Electric Export & Trading Co. Ltd. Mr. Cock was born in Melbourne, Australia, and received his technical training and early experience in Australia at the Melbourne Technical School and with the Victorian Railways. During the first world war he served in the Royal Navy and saw active service in the Pacific and in the North Sea. On demobilisation in 1919, he joined the construction staff of Messrs. Merz & McLellan, Consulting Engineers, in Melbourne, in connection with the electrification of the Melbourne suburban railways, and a large power project for the Victorian Electricity Commission. In 1924 he proceeded to India as one of the supervising engineers of Merz & McLellan on the electrification of the G.I.P.R. suburban lines, and the B.B.C.I.R. suburban lines, and the main lines of the G.I.P.R. to Poona and Igatpuri In 1929, when the electrification was completed, he joined the G.I.P.R. Transportation (Operating) Department and held appointments as Distribution Engineer and Rolling Stock Engineer, before being appointed Traction Superintendent and later Divisional Superintendent for the area including Bombay. Between June, 1941, and February, 1942, he was loaned to the Royal Indian Navy and served afloat, as Lt.-Commander. It became necessary later in 1942 to recall him to his post as Divisional Superintendent, G.I.P.R., on account of wartime pressure on the Indian railways. In 1945 Mr. Cock returned to England and took up the post of Chief Electrical Engineer to the Southern Railway. On the nationalisation of the railways in 1948 he was appointed Chief Electrical Engineer to the Railway Executive, and relinquished this post in 1950 to become General Manager of the Traction Department of the English Electric Co. Ltd., and a member of the board of the English Electric Export & Trading Co. Ltd.



Mr. C. M. Cock

Elected President, Institution of Locomotive Engineers, for 1952-53

Mr. N. C. Kapoor

Appointed Chief Operating Superintendent, East Indian Railway

Institute of Transport

The Council of the Institute of Transport has elected Mr. C. T. Brunner as President of the Institute for 1952-53. He will assume office on October 1 next, on the retirement of Mr. A. B. B. Valentine. Mr. Brunner has been a Director and General Manager of Shell-Mex & B.P. Limited since 1950.

Mr. A. W. Manser, Assistant Mechanical Engineer (Works—Railways), London Transport Executive, has been appointed Chief Mechanical Engineer (Railways).

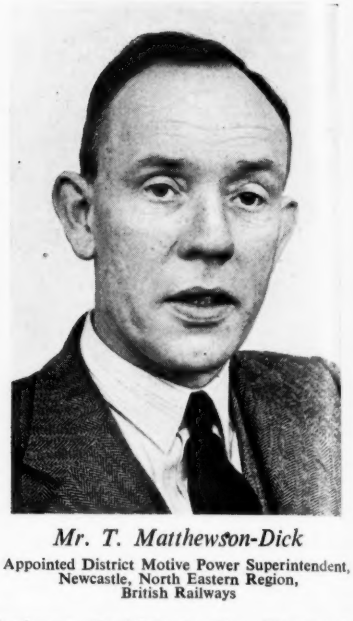
Mr. N. C. Kapoor, B.Sc., who has recently been appointed Chief Operating Superintendent, East Indian Railway, and was formerly Chief Transportation Superintendent, Great Indian Peninsula Railway, was born in 1902. He was educated at the St. John's College, Agra, and after graduating as Bachelor of Science, took up an appointment on the college staff. Simultaneously, he studied law and for M.Sc. at Agra College, but before completing these courses, took an examination for the railway service. He joined the former Eastern Bengal Railway in January, 1926, as a probationary officer. He was appointed as Assistant Traffic Superintendent and within a few months was selected to officiate in the senior scale. In 1937 he was transferred to the East Indian Railway, where he served as a Senior Scale Officer in various divisions, including the head office, and was promoted as Deputy Chief Operating Superintendent (Coaching) in 1942. Between 1942-48 he occupied the posts of Deputy Chief Operating Superintendent (Goods); Deputy Chief Commercial Manager; Divisional Superintendent, Allahabad; Divisional Superintendent, Moradabad; Divisional Transportation Superintendent, Dhanbad; and Divisional Superintendent, Asansol. In

Mr. R. Paterson

Appointed Irish Traffic Superintendent, British Railways (London Midland, Scottish, and Western Regions)

Mr. I. V. Longley

District Motive Power Superintendent, Newcastle, North Eastern Region, who has retired



Mr. T. Matthewson-Dick

Appointed District Motive Power Superintendent, Newcastle, North Eastern Region, British Railways

June, 1948, he became Traffic Manager, Oudh Tirhut Railway, and at the end of that year was promoted Chief Commercial Manager. Mr. Kapoor later was transferred to Bombay, where shortly afterwards he was promoted Chief Transportation Superintendent, Great Indian Peninsula Railway.

Mr. R. Paterson, Chief Assistant (Freight) to the Commercial Superintendent, London Midland Region, who has been appointed to the new post of Irish Traffic Superintendent, British Railways (London Midland, Scottish, and Western Regions), will have his headquarters at Euston. He will take up his full duties on May 1, after a tour of inspection of the ports and traffic centres, when he will take the opportunity of meeting the Agents concerned. Mr. Paterson joined the L.N.W.R. as an apprentice in 1911, and received training in the Passenger and Goods Departments. Returning from service in the Queen's Westminster Rifles during the 1914-18 war, he held various headquarters appointments until 1931, when he joined the development section of the Chief Commercial Manager's Office, L.M.S.R., to specialise in and experiment with various types of containers and equipment in connection with the transfer of bulk mineral traffic to and from road and rail vehicles. His subsequent appointments included Assistant to District Goods & Passenger Manager, Derby (1934); Goods Agent, Nottingham (1937); Assistant District Goods & Passenger Manager, Northampton (1938); Goods Agent, St. Pancras & Somers Town (1941); Assistant District Goods Manager, Birmingham (1942); District Goods Manager, Bolton (1943); and Mineral Manager, L.M.S.R., in 1947. Mr. Paterson became Chief Assistant (Freight) to the Commercial Superintendent, London Midland Region, in 1950, which position he now vacates. During the past two years he has specialised on the Irish cross-channel traffic.

Mr. I. V. Longley, M.C., M.I.Loco.E., District Motive Power Superintendent, Newcastle, North Eastern Region, who, as recorded in our February 29 issue, has retired, joined the railway service in 1905 as a pupil on the North Eastern Railway, under Mr. Wilson Worsdell, Mechanical Engineer, Gateshead Works. Mr. Longley served as a pattern maker and progressed through the various trades at Gateshead, Walker Gate, and York Carriage Shops. He was appointed Foreman at York Shed in 1909, and Inspector in 1910. He became Shed Foreman at Blyth in 1923, and moved to a similar position at Heaton (Newcastle) in 1927. In June, 1932, Mr. Longley was

Mr. S. W. Smith

Appointed a Traffic Costing Officer, British Transport Commission, London

Mr. F. T. Gray

Appointed a Traffic Costing Officer, British Transport Commission, York

Mr. H. Hoyle

Appointed Assistant to Operating Superintendent (Freight Trains), E. & N.E. Regions

promoted Assistant District Shed Superintendent at Darlington (including Shildon District), and three years later was made Assistant District Locomotive Superintendent at York. This was followed by promotion to District Locomotive Superintendent at Heaton in 1937, and from there he went to Sunderland as District Locomotive Superintendent in 1939. He was appointed to a similar post at Darlington in 1942 and at Newcastle in 1945. Mr. Longley was commissioned in the Royal Engineers in 1915 and went overseas in 1916. He was in command of the Advance Railway Operating Division Detachment in Ypres Salient and finally Officer Commanding R.O.D., British Forces of the Rhine. He was mentioned in despatches and awarded the Military Cross. He has been a Member of the Institution of Locomotive Engineers since 1925, and in 1928 opened a centre in Newcastle-on-Tyne, at which he acted as honorary secretary for four years.

Mr. T. Matthewson-Dick, A.M.I.Mech.E., A.M.I.E.E., M.I.Loco.E., Assoc.Inst.T., District Motive Power Superintendent, York, North Eastern Region, who, as recorded in our March 7 issue, has been appointed District Motive Power Superintendent, Newcastle-on-Tyne, was educated at Rutherford College and Rutherford Technical College, Newcastle-on-Tyne, and joined the L.N.E.R. at Newcastle in the Electrical Department in 1923. Later he transferred to the Chief Mechanical Engineer's Department at Gateshead Works and after completing his apprenticeship and training in the Locomotive Running Department was appointed draughtsman at Stooperdale, Darlington, in 1929. He returned to the Locomotive Running Department at Gateshead Shed as a junior inspector, where he remained until appointed technical inspector in the Locomotive Running Superintendent's Office at York in 1933, spending two years at York Shed. In 1938 he became Locomotive Shedmaster at Newport (Middlesbrough), two years later became Locomotive Shedmaster at Haymarket Depot, Edinburgh, and a year later moved to a similar position at St. Margaret's Depot, Edinburgh. In 1943, Mr. Matthewson-Dick was made Technical Assistant to the Locomotive Running Superintendent, York, a position he held until 1947, when he was appointed District Locomotive Superintendent, York. In 1945 he acted as District Locomotive Superintendent at Sunderland for nearly a year. Between 1932-48 Mr. Matthewson-Dick lectured at Rutherford Technical College, Newcastle-on-Tyne, Constantine Technical College, Middlesbrough, and York Technical College, on mechanical and electrical subjects. He is Chairman of the North Eastern Centre (Leeds) of the Institution of Locomotive Engineers for the 1951-52 session. He is a Vice-President and Member of Council of the York Railway Institute. He was the first President of the York Locomotive Society.

Mr. S. W. Smith, who, as recorded in our January 4 issue, has been appointed a Traffic Costing Officer, British Transport Commission, London, joined the L.N.E.R. in the Chief Accountant's Department, Kings Cross, whence he was transferred to the Chief General Manager's Office for work in connection with the road and rail traffic acts. In 1933 he was appointed a traffic apprentice. After his training, which took place in the North Eastern Area, he again served in the Chief General Manager's Office, Kings Cross, and subsequently occupied posts under the District Operating Superintendent, Hull, and the Divisional General Manager, York. On the outbreak of war he volunteered for the services and until October, 1945, served in the Royal Engineers, Movement Control branch, as a Senior Railway Transport Officer. After release from the Army he took up the position of Yardmaster, Darlington, and in 1947 became Assistant Cartage Manager, Southern Area, L.N.E.R., moving in May, 1950, to Paddington to fill a similar position on the Western Region.

Mr. F. T. Gray, who, as recorded in our January 4 issue, has been appointed a Traffic Costing Officer, British Transport Commission, York, joined the North Eastern Railway in 1922, in the office of the General Manager, York. He became a traffic apprentice in 1925 and underwent training until 1930. After nearly five years in the road motor section of the office of the Chief General Manager, L.N.E.R., he was appointed Assistant to the District Goods Manager, Leeds, and, later, Head of the General Section of the Passenger's Manager's Department at York, a position he held until 1939. During the next two years Mr. Gray successively became Acting Assistant to District Goods Manager, Leeds; Head of Coaching Stock Section, Central Rolling Stock Control, York; and Acting Assistant to District Goods Manager, Hull. In 1943 he became Acting Cartage Manager, York, and a year later was appointed to the post officially. In 1949 Mr. Gray became Assistant to Commercial Superintendent (Cartage & Terminals), North Eastern Region, and he was appointed Assistant to Commercial Superintendent (Freight) in 1950.

Mr. H. Hoyle, Assistant to Operating Superintendent (Passenger Trains), Eastern and North Eastern Regions, who, as recorded in our February 15 issue, has been appointed Assistant to Operating Superintendent (Freight Trains), was educated at Archbishop Holgate's Grammar School, York, and began his railway career with the North Eastern Railway in the General Superintendent's Office at York. He secured a traffic apprenticeship in 1927 and after training was appointed to a clerical post in the Locomotive Running Superintendent's Trains Section at York. After occupying a number of posts in which he was required to deal with all aspects of passenger and freight train working, Mr. Hoyle transferred in 1944 to the Western Section of the former Southern Area, L.N.E.R., as Head of the Superintendent's and Locomotive Running Superintendent's Joint Passenger Trains Section. In 1947 he became Chief Freight Trains Clerk in the same office and in 1948 was appointed as Traffic Officer (Passenger) in the Eastern Group Operating Office, attached to the Railway Executive. When, under a change in organisation, the post of Operating Superintendent, Eastern and North Eastern Regions, Marylebone, was created, Mr. Hoyle became Assistant (Passenger Trains) to that Officer.

The Minister of Transport has appointed Mr. Jesse Delicate, who is a representative of commerce, to be a member of the Transport Users Consultative Committee for the West Midland area, in place of Mr. C. E. Jordan, who has been appointed to the Central Transport Consultative Committee for Great Britain. Mr. Delicate is Transport Manager of Courtaulds Limited. Mr. A. J. Wright, a nominee of the British Transport Commission, has been appointed a member of the Transport Users Consultative Committee for the South Eastern Area, in succession to Mr. F. C. G. Mills, who has resigned. Mr. Wright is Divisional Manager, South Western Division, Road Haulage Executive.

Mr. L. D. Robson, Deputy Controller of Stores, Southern Railway, India, has retired.

Mr. Leslie Gamage, Vice-Chairman & Joint Managing Director of the General Electric Co. Ltd., arrived in this country by air from Johannesburg on March 21, after a tour of South Africa and Rhodesia.

LONDON MIDLAND REGION STAFF CHANGES

The following staff changes have been announced by British Railways, London Midland Region:—

Mr. J. S. Scott, Acting Locomotive Works Manager, Doncaster, Eastern Region, to be Locomotive Works Manager, Gorton.

Mr. R. Tildesley, District Motive Power Superintendent, Bletchley, to be District Motive Power Superintendent, Rugby.

Mr. C. R. Bennett, Assistant District Operating Superintendent, Liverpool Central, to be Assistant District Operating Superintendent, London (W.).

BRITISH TRANSPORT OFFICERS' GUILD

In October, 1951, an association of the officers and senior staff of the Road Haulage Executive was merged with the British Transport Officer's Guild and so necessitated a revision of the Constitution of the Guild. This revision, which is referred to elsewhere in this issue, provides for two Divisions, Railways & General, and Roads, and at a recent meeting of the General Council, the following Officers were unanimously elected to serve for the current year:—

Master of the Guild: Mr. A. L. Castleman, formerly District Goods Manager, London, L.M.S.R.

Deputy Master of the Guild: Mr. Eric W. Whiting, Assistant Manager, Parcels Services, Road Haulage Executive.

Railways & General Division, Chairman of Executive Council: Mr. H. Eccles, District Goods Superintendent, Broad Street Station, L.M.S.R.

Roads Division, Chairman of Executive Council: Mr. F. Lever, District Traffic Superintendent, Road Haulage Executive, Bristol.

Mr. D. McK. Ford, Vice-President, Purchases & Stores, Canadian National Railways, 1940-48, whose death we recorded briefly in our March 21 issue, joined the North British Railway at Glasgow in 1900. He went to Canada in 1905 and joined the staff of the Canadian Northern Railway at Toronto. In July of the same year he was appointed chief clerk in the Operating and Accounting Departments of the Halifax & Southwestern Railway in Nova Scotia. In July, 1910, he was transferred to Quebec as Accountant & Cashier for the company's Quebec lines and was appointed Auditor of Quebec lines in 1916. He returned to Toronto in the same year as Accountant of the Eastern Lands Department of the C.N.R. and Canadian Government Merchant Marine, and in 1922 was made Office Assistant to the President. In 1923, he was appointed Assistant to the Director of Purchases & Stores in Montreal, and the following year became Assistant to the Vice-President, Purchases & Stores. He was appointed General Purchasing Agent for the system in 1937 and three years later became Vice-President. He retired in 1948.

XUM

British Transport Commission Statistics (Period No. 1)

Summary of the principal statistics for the four-week period ending January 27

STAFF

—	B.T.C. Head Office	British Railways	London Transport	British Road Services (Road Haulage)	Road Passenger (Provincial & Scottish)	Hotels & Catering	Ships & Marine	Inland Waterways	Docks, Harbours, Wharves	Railway Clearing House	Commercial Advertisement	Legal	Films	Total
Number ...	278	602,924	99,088	79,561	59,650	16,072	5,869	4,911	20,820	632	202	315	38	890,360
Inc. or dec.	+1	+3,236	−191	−720	+5	−244	−25	−21	−14	−1	—	−1	−1	+2,024

BRITISH TRANSPORT COMMISSION TRAFFIC RECEIPTS

—	Four weeks (Period No. 1)	
	1952	1951
	£000	£000
British Railways—		
Passengers	6,063	5,597
Parcels, etc., by passenger train ...	2,443	2,221
Merchandise	7,819	6,763
Minerals	3,273	2,582
Coal & coke	7,920	6,443
Livestock	73	73
	27,591	23,679
British Railways—		
C. & D. and other road services...	850	736
Ships and Vessels	585	565
London Transport		
Railways	1,221	1,199
Buses & coaches	2,518	2,275
Trams & trolleybuses	666	740
	4,405	4,214
British Road Services—		
Freight charges, etc.	5,760	5,053
Road Passenger Transport	2,905	2,586
Docks, Harbours & Wharves ...	1,118	848
Inland Waterways	160	115
Hotels & Catering	1,128	1,010
Total	44,502	38,806

LONDON TRANSPORT

—	Passenger journeys	Inc. or dec. per cent. over 1951	Car miles	Inc. or dec. per cent. over 1951
	000		000	
Railways...	47,666	+ 0·9	17,199	− 3·3
Buses & coaches	222,606	+ 9·8	26,328	+ 7·6
Trams & trolleybuses	66,439	− 10·4	6,658	− 14·2
Total	336,711	+ 3·9	50,185	+ 0·3

INLAND WATERWAYS

Tonnage of traffic and ton miles

—	Tonnage	Inc. or dec. per cent. over 1951	Ton miles	Inc. or dec. per cent. over 1951
	000		000	
Coal, coke, patent fuel & peat	479	+17·7	7,222	+26·2
Liquids in bulk	151	+ 8·2	3,568	+10·5
General merchandise ...	329	+ 2·9	5,020	+12·7
Total	959	+10·7	15,810	+17·9

BRITISH RAILWAYS

Rolling Stock Position

—	Operating stock	Number under repair	Available operating stock	Serviceable stock in 1951
Locomotives	18,808	3,306	15,502	15,581
Coaching vehicles	57,861	5,270	52,591	52,597
Freight wagons...	1,108,700	67,790	1,040,910	1,033,628

BRITISH RAILWAYS

Passenger Journeys (Month of December, 1951)

Full fares	Monthly returns	Excursions, cheap day, etc.	Other descriptions	Workmen	Season tickets	Total	Inc. or dec. per cent. over 1951
6,533,000	10,729,000	19,782,000	3,986,000	17,240,000	21,561,000	79,831,000	+7·2

BRITISH RAILWAYS

Freight Tonnage Originating and Estimated Ton-Miles (Period No. 1)

—	Minerals	Merchandise	Coal & coke	Livestock	Total	Inc. or dec. per cent. over 1951
	000	000	000	000	000	
Tons originating ...	4,877	4,006	13,038	41	21,962	+2·7
Ton-miles	417,627	540,906*	805,439	—	1,763,972	+3·1

* Includes livestock

BRITISH RAILWAYS (Period No. 1)

—	Total steam coaching train-miles	Total electric coaching train-miles	Total freight train-miles	Freight train-miles per train engine-hour	Net ton-miles per total engine-hour	Locomotive coal consumption	
						Total tons	Lb. per engine-mile
1952	13,367,000	3,736,000	10,926,000	8·2	591	1,080,000	66·5
1951	13,956,000	3,724,000	10,673,000	7·8	557	1,084,000	65·8

New Terminal Building at Southampton Docks

Improved facilities for passenger and cargo traffic with South Africa

The British Transport Commission has approved a recommendation of the Docks & Inland Waterways Executive for the reconstruction of cargo and passenger accommodation at Berth 102, Southampton Docks, at an estimated cost of £900,000 to replace that destroyed during the war. Mr. R. P. Biddle, Docks & Marine Manager, Southampton, has announced that it is hoped to begin the work this year and that it will take about two years to complete.

From 1920 until the war the Union Castle vessels used berths 34 to 39 at the southernmost end of the Docks estate, but it had become clear that, because of the introduction of larger vessels with greater carrying capacity, reconstruction would have to be undertaken.

The project had to be shelved on the outbreak of war. Early in 1947, in view of the company's decision to place even larger vessels on its South Africa service, an improvement of facilities to enable the greater carrying capacity to be handled within a turnround time adequate to maintain a schedule covering a weekly arrival and departure with a fleet of eight vessels, demanded early consideration.

As the total area could not be increased, development had to be confined to the existing site. The existence of No. 5 dry dock militated against proposals to increase both rail and road communications and loading facilities. The only solution was to transfer the entire operations of the company's mail vessels to berths 101-2. A scheme was therefore prepared for the erection of a two-storey building, with modern facilities for passengers and equipped on the upper floor with mechanical appliances for rapidly handling cargo, on the site of 102 berth transit shed, destroyed by enemy action. The plan was to include a part of the western end of No. 101 single-storey shed, which had been damaged. The facilities thus provided at this berth were to be used by the incoming vessel, which, after discharge, would move to the adjacent berth 101 for loading.

The former Union Castle berths will be used by cargo vessels of other companies. As a further stage it is proposed to erect a single-storey building behind berths 101 and 102, and lease it to the shipping company for offices and stores.

The total length of the berths will be 1,700 ft., and the quay width 50 ft. Adequate six-ton and three-ton 86-ft. jib electric level luffing cranes will be available. The berths will be served by two quayside railway tracks, two tracks within the buildings and three tracks on the land side of the buildings, all linked with the main line.

Accommodation in Building

The new building will be 931 ft. long and 162 ft. 6 in. wide overall; the general height from quay level to the main ridge will be 55 ft. The ground floor will be used as a working floor for the clearance of passengers and their baggage through Customs, and at the eastern end will be a large waiting hall, 196 ft. long and 90 ft. wide, centrally placed between the new terminal and the adjoining single-storey building at berth 101. On the north side will be a rail island loading platform 575 ft. long and 16 ft. wide and at the western end a loading dock for road traffic. At mezzanine level above the waiting hall office accommodation will be provided for the Customs, shipping agents and the dock authority's staff.

On the first floor there will be an open working area, 931 ft. long and 108 ft. wide, for handling cargo; on the south side of it there will be an open cargo landing platform 34 ft. 6 in. wide. In an enclosed loading bay 441 ft. long and 20 ft. wide, on the north side, will operate four electric traversing hoists for loading direct into railway wagons at ground floor level. For visitors and passengers' friends there will be a balcony, reached by stairway from the quay.

The foundations of the new building will be of reinforced concrete piles, supporting a steel-framed structure of continuous welded design. The ground floor surfaces will be of concrete finish with granolithic paving, and the upper floor of reinforced concrete cast *in situ* paved with granolithic. The walls will be of brick cavity construction generally, and the roof will be of lightweight roofing material.

Institute of Transport Annual Dinner

The annual dinner and dance of the Institute of Transport was held at the Connaught Rooms, London, on March 21. Mr. A. B. B. Valentine, President, said the institute had many distinguished guests to welcome. They were greatly honoured to have with them the High Commissioner for South Africa, the Swiss Minister, the Acting Deputy High Commissioner for Australia, the Agents General for New South Wales and Victoria, and the Commercial Secretary to the Royal Netherlands Embassy. He regretted that Mr. J. S. Maclay, the Minister of Transport, was unable to be present, but they welcomed in his place Mr. Gurney Braithwaite, Parliamentary Secretary to the Ministry. Their two chief guests were Mr. Herbert Morrison, who had been the main political father of London Transport; and Lord Runciman, a practical transport man who had wide experience and great responsibilities in more forms of transport than one.

Mr. Herbert Morrison proposed the toast of "Transport." He dwelt on the importance of providing reasonable comfort for suburban travellers going to and from their work. Starting work after standing for half an hour in a crowded carriage was not good for business and industrial efficiency. They looked to the transport undertakings to do their best, but it was a great pity that vast, sprawling built-up areas ever came into existence.

He had played his part in creating a large number of publicly-owned concerns, starting with London Transport in 1931. To those who opposed their creation he would say, "give them a fair chance." The public corporations were here and most of them were going to stay. Let us help and encourage them to work well. To the public corporations he would say, "don't get into a groove. Be alive, be enterprising. Move your management about a bit to get variety of experience. Live with your public, your customers, and your workers. Tell them about your business and its problems and win their good will and co-operation."

To the politicians he would say, "don't, please, try to insist upon a rigorous degree of political control. Try to blend business management and efficiency with public accountability." To all transport men, whether on land, on the seas or in the air, whether in private enterprise or in public enterprise, he said, "good luck to transport; good luck to our country."

Lord Runciman of Doxford, President of the Chamber of Shipping of the United Kingdom, replied to the toast. He said that in considering any service it was important to compare the effort that went into it with the benefit that came out. Probably shipping came closer to knowing its true costs than the other forms of transport. They paid for their ports, lighthouses and buoys and were under the constant check of international competition. Air transport paid less for its ancillary services than they cost. He gathered that air travel was becoming so cheap that no-one would travel across London when they could go to the end of the Continent by air for less. The railways had to pay not only for the upkeep of their track but of their machinery, signalling, interest on the land their track was laid on and so on.

Were we going to spend capital on rail, road or air? Were we going to keep our railways for ever, or would the roads in the long run do the job better? There were endless questions like these. Much depended on what scientists discovered in the future, and on how long people would work and what they expected to get for doing it.

Two things were needful now—to work out from time to time what the true costs of transport were so as to give those in this country the most useful service at the lowest possible cost; and to persuade them they had done so, and even earn their gratitude.

Among those present were:—

Lord Douglas of Kirtleside, Lord Hurcomb, Lord Latham, Sir Frederick Handley Page, Sir Gilmour Jenkins, Sir Wavell Wakefield, Sir William V. Wood, Brig.-General Sir H. Osborne Mance, Brig.-General Sir Godfrey Rhodes; Messrs. C. E. Beevers, J. W. Bowen, Ernest A. J. Davies, A. C. Hartley, D. R. Lamb, F. A. A. Menzler, J. S. Nicholl, A. S. Quartermaine, T. W. Royle, Gilbert S. Szlumper, F. J. Speight.

NEW MEDICAL DEPARTMENT AT ASHFORD WORKS.—Mr. C. P. Hopkins, Chief Regional Officer, Southern Region, opened a new Medical Centre at Ashford Works on March 20. It was in 1946 that the Directors of the Southern Railway decided to develop an industrial medical service at Ashford, and in the next year Dr. A. E. Ginn was appointed as full-time Divisional Medical Officer. Suitable accommodation was difficult to find owing to shortage of labour and materials, but today a modern and well-equipped Medical Centre has been provided in the works. It contains a consulting room, special eyesight examination room, waiting room and first-aid treatment room, together with accessory offices and stores. Mr. T. J. Henniker, who has been Ambulance Attendant at the works for over 20 years and Ambulance Class Secretary responsible for first-aid matters, now has at his disposal an up-to-date treatment room, and the advantage of a doctor on the spot for consultation.

Reorganisation of Irish Commercial Services

The appointment of Mr. R. Paterson, Chief Assistant (Freight) to the Commercial Superintendent, London Midland Region, to the new post of Irish Traffic Superintendent, British Railways (London Midland, Scottish, and Western Regions), with headquarters at Euston, completes the reorganisation of the commercial control of British Railways rail and shipping traffic to and from Ireland. The new organisation is designed to provide a more effective co-ordination of all these services, to make the best use of available resources over the various shipping routes, and to foster the development of the substantial traffic which they carry.

This new organisation is generally similar to those which have been developed over many years for the Continental and Channel Islands services of British Railways. The experience gained with this system of organisation in the handling of record postwar traffics on the Continental services is now being brought to bear on the development of the Irish services, and the growing passenger and freight traffics using them. With the appointment of Mr. Paterson on the commercial side, is that, already announced, on the marine side, of Captain J. D. Reed as Manager (Irish Shipping Services), British Railways. Subject to general oversight on important policy by the Chief Regional Officers concerned and the Railway Executive, these two officers will work in closest conjunction in the utilisation of the services as a concerted whole, and in liaison with the various authorities in Ireland and with the independent shipping companies. A portrait and biography of Mr. Paterson appears in our Personal columns.

Reconstruction and Widening at Potters Bar

The British Transport Commission has approved the reconstruction of Potters Bar Station, Eastern Region, on the former Great Northern main line 12¼ miles from Kings Cross, and a widening to provide four tracks instead of two.

Two additional running lines, one up and one down, will be laid from near the north portal of Potters Bar Tunnel to the north end of Potters Bar Station, about ¼-mile. The existing platforms will be rebuilt as two island platforms to serve all four new running lines, and new station buildings at platform level and a new signalbox will be erected. The track layout at the north end of the station will be altered. New booking and parcels offices at ground level will be provided.

Goods facilities, to be concentrated on the up side, will include new goods offices, new roadways, and a new track layout to facilitate shunting. The station approaches will be rearranged, and additional bridges over Darkes Lane to a width of 60 ft. will be built. The scheme will cost some £400.000.

At present, freight trains and slow passenger trains interfere with the running of expresses between Greenwood, north of New Barnet, and Potters Bar where there are only two lines. The widening at Potters Bar is the first stage of a scheme to improve running facilities by quadrupling this section throughout. The remainder of the widening works between Greenwood and a point north of Potters Bar Tunnel are under consideration. They include two additional tracks for 2½ miles, entailing the construction of three new double-line tunnels. Their completion would give four lines between Kings Cross and the Welwyn Viaduct, a little over 21 miles.

Passenger traffic at Potters Bar is heavy —nearly 400,000 tickets are issued and collected annually—and the area is developing. Freight traffic handled has risen appreciably since 1938. These factors were considered when the new works were approved.

Canopy Roofing

Prestressed concrete canopies above the island platforms will be of a type needing only eight columns to support a canopy 260 ft. long, causing minimum obstruction of the platform area. A subway connecting all platforms from either the up side or down side approaches will replace the existing footbridge. The exterior of the station buildings will be constructed, as far as possible, of materials which will reduce future maintenance. The designs call for a minimum use of steel.

The mechanical signalbox at Potters Bar will be abolished to enable the new down slow line to be laid in. There will be a new all-electric signalling installation controlled from a new box on the up side. The electric point machines and colour-light signals will be operated on the route-setting principle from a control panel in the upper floor of the new box.

London Passenger Fares

Statement by the B.T.C. on the recent increases

The British Transport Commission on March 19 issued a statement on fares in the London Area. Reviewing the inquiries by the Transport Tribunal, the statement said four points of paramount importance were made. The London passenger was *not* being over-charged in order that relief might be given to other passengers elsewhere in the country. The Londoner was being asked to pay no more than the cost of the services he used. During 1951 he paid less than the cost. For that year the estimated net traffic receipts, before contributions to interest, amortisation of capital and other necessary central charges were in deficit by £1·6 million, and even after the increased fares, the figure of net traffic receipts in a full year would be far below what could reasonably be required to finance the capital invested in the undertaking. The Londoner was *not*, therefore, helping to finance any travel elsewhere.

In any comparison of London Transport fares with those elsewhere, traffic and other considerations must be taken into account. The congestion of London streets slowed down traffic considerably and the cost per bus-mile rose accordingly. The cost of town service per vehicle mile was normally much higher than the cost of services in less congested areas.

Even with the present increases, London Transport fares would be only 74 per cent. above pre-war, while costs levels had gone up much more than double. If it was true that the pre-war pound had declined to less than half its purchasing power, then in point of fact the London fares as a whole were less than pre-war in real terms. This had been made possible partly by the fact that the Londoner was using the system more than before the war, partly by the fact that financial charges had remained at roughly the same level in money, *i.e.*, they had become less in real terms, and partly by a general improvement in operation.

If it took over a year to obtain an increase in London fares, then obviously, in times of rapidly rising costs, the fares must move up in fairly large jumps. It should be noted, however, that the present increases made no provision for overhauling deficits which had accrued in respect of London traffics during the last year or two.

Transport costs could not remain fixed when the cost of everything else was rising. Wages, coal, steel, oil, oil duty, and prices of materials generally had all been rising, and for London Transport alone since October, 1950, they had risen by about £10 million a year (including more than £1 million for the increase in fuel duty just imposed by the Budget).

The Commission gave the following analysis of the rises in costs:—

INCREASE IN ANNUAL LEVEL OF WAGE RATES AND PRICE LEVELS SINCE OCTOBER, 1950 (ALL SERVICES)

	£ million	£
Wage rates—		
November, 1950, and January, 1951 ...		2,000,000
August/September, 1951		2,500,000
		4,500,000
Fuel—		
Fuel oil—		
April, 1951, duty	0·6	
March, 1952, duty	1·1	
Prices (various dates)	0·4	
	2·1	
Coal (including freight thereon) various dates	0·5	
		2,600,000
Tyres		600,000
Maintenance materials (increase in purchase prices)		1,000,000
Increased depreciation		600,000
Other items—clothing, stationery, etc. ...		700,000
		£10,000,000

SUNVIC CONTROLS LIMITED AT PHYSICAL SOCIETY EXHIBITION.—A resistance thermometer controller for the control of furnaces operating at temperatures from 300° to 1,100° C. will be among the exhibits of Sunvic Controls Limited at the Physical Society Exhibition in London from April 3 to 8. In this instrument the thermometer is connected in a bridge circuit, and any out-of-balance signal is amplified before application to the bi-metal type energy regulator. A selection of other thermostatic instruments and temperature recording or measurement devices will also be shown by the company.

CLOSING OF LEITH CENTRAL STATION.—British Railways, Scottish Region, announces that on and from Monday, April 7, the passenger train service will be withdrawn from Leith Central Station. The passenger service between Edinburgh Princes Street and Leith L.M.S. will continue to operate. Passengers travelling to that part of Leith formerly served by Leith Central Station will be booked to Edinburgh. Frequent tram and bus services operate between Edinburgh and Leith. As from the date named, all passenger train parcels and miscellaneous traffic hitherto dealt with at Leith Central Station will be concentrated at Edinburgh Waverley and a collection and delivery service will be given in respect of such traffic. Parcels traffic, if desired by traders, will also be accepted at, or given delivery at, Leith L.M.S. or Leith North Stations.

Parliamentary Notes

Employment in Railway Workshops

Major Sidney Markham (Buckingham—C.) on the motion for the adjournment of the House of Commons on March 21 raised the question of employment in railway workshops.

Defence Regulation 55(2 A) said Major Markham, to which the Minister of Transport had referred on March 17, and which permitted railway works to engage on armament production, seemed to apply only in an emergency. He asked the Minister of Transport to arrange immediately for rearmament work in railway workshops, even only as a stopgap, and to represent to the B.T.C. the undesirability of abandoning rolling stock construction.

Mr. Peter Smithers (Winchester—C.) said he had received representations from the Corporation of Eastleigh about unemployment at the works. There was a chance that the steel situation might improve towards the end of 1952, and, therefore, the more reason for retaining skilled staff.

Carriage Construction Suspended

Mr. Gurney Braithwaite (Parliamentary Secretary to the Ministry of Transport) said the Ministry endorsed the policy under which carriage construction was temporarily suspended to give priority to track and wagons and thus concentrate on railway safety and efficiency.

The railways were doing all they could, he added. Even so, by the end of February, 1,274 carriage-building staff and 509 wagon workers had been affected, but work on repairs had been found temporarily for 677. During the next six months it was estimated that 1,720 additional staff on carriage building and 170 wagon building would became redundant. At Wolverton itself nearly 100 men had retired or found other temporary employment, and the Railway Executive had provided jobs for about 25. They expected redundancy of rather more than 300 between now and August.

Representations, continued Mr. Braithwaite, had already had been made to the Minister of Supply, who was fully aware of the resources available in railway workshops, and was already in touch with the Railway Executive. Work was already being done in the locomotive shops at Horwich, and the Ministry's policy was to use the capacity of the railway workshops for rearmament work where suitable and necessary to supplement existing industrial capacity.

The repair of locomotives and coaches required by the Minister of Supply was normally placed with the workshops. Two locomotives had recently been overhauled, and some eleven coaches were about to be placed, also for overhaul, and it was expected that that work would be allotted to Wolverton.

The British Iron & Steel Federation, Mr. Braithwaite said, did not support a statement attributed to one of its officials that there would be a surplus of steel other than light alloy this year. In the Federation's view, although supplies were likely to improve in the second half of the year, steel would continue to be scarce. The Minister of Supply concurred with that opinion.

Freight Charges

Mr. Hector Hughes (North Aberdeen—Lab.) in the House of Commons on March 21 moved a motion to introduce legislation to amend the Transport Act, so as to provide for standard freight charges, irrespective of the distance covered. He pointed out that the United Kingdom was treated as a unit for postal purposes, but not for the carriage of essential commodities, such as fish and agricultural produce; this, he said, caused hardship to producers who had to despatch to markets over long distances. As the railways were nationalised, distance need not be a determinant in fixing charges. The railways should be relieved of the financial burden of their track, which should be a national charge.

The Cameron Report, Mr. Hughes added, recommended lowering of transport charges over long distances; that was inconsistent with a widespread demand for a flat rate. The Minister should seek fuller legislative power. If he had doubts on the subject, he should ask for a Royal Commission to investigate.

Mr. J. Grimond (Orkney & Zetland—Lib.) said that the whole subject of stopping the drift of population from the countryside was dominated by the question of freight charges.

Disadvantages of Flat Rate

Lord John Hope (Pentlands, Edinburgh—C.) said that it was hard to make a flat rate cover the cost of traffic offering at any one moment and that where the flat rate exceeded actual cost, traffic would seep away. A flat rate would also result in wasteful use of transport, subject it to endless strain, and put up costs.

Mr. Geoffrey Wilson (Truro—C.) said that many lines in Scotland should be treated as light railways and relieved of their statutory responsibilities as to fencing, signalboxes, level crossings and so on, which were in excess of traffic needs.

Faster Services Needed

There should be more fast perishable-goods trains and improved terminal facilities for handling perishables, Mr. Wilson continued.

There had been a falling off in passenger train speeds in the past 40 years. He drew attention to the article in *The Railway Gazette* of March 14, which compared passenger journey times between London and provincial centres in 1913, 1939, and 1951. In only two cases was the 1951 timing as fast as that in 1939; so much for the "poor bag of assets" taken over on nationalisation of the railways. There must be room for acceleration of passenger trains, and that was probably true also of express goods trains.

Mr. Edward Davies (Stoke-on-Trent North—Lab.), urging increased capital expenditure so as to improve plant and permit of higher speeds, pointed out that the state of the permanent way was the principal cause of the present reduced speeds. The railways were suffering from neglect both before and during the war.

Mr. Robert Boothby (East Aberdeenshire—C.) said that branch and feeder lines in industrial areas could have been more extensively dieselised. He advocated flat rates for fish and coal.

Future of Nationalised Transport

Viscount Hinchingbrooke (South Dorset—C.) said that the B.T.C. was in a state of suspended animation and, if the Conservative Party had anything to do with it, would shortly die in its present form. There was to be, in this Session of Parliament, a very large surgical operation conducted on the Commission and all its services, both road and rail. In the process, he hoped, of giving them the *coup de grâce* they would return to private competition both of road and rail and rail and road. In those circumstances, it seemed quite fallacious to try to apply a uniform scheme of charges for the system as it would appear in a few short months.

The scheme of charges drawn up by the Railway Rates Tribunal in 1921 and taken over by the B.T.C. was too rigid, Lord Hinchingbrooke added. The railways must be allowed to seek traffic at rates they could afford.

Government Policy on Rates

Mr. Gurney Braithwaite replied on behalf of the Government that a flat rate for merchandise would be prohibitive for short distance traffic, which would go to other forms of transport, or would not pass at all. Such a loss of traffic would start a spiral of increases in the flat rate itself, which would cause an impossible position before very long.

He explained the scale of charges for mail, which varied according to weight and distance.

Industries, he continued, particularly heavy ones, had been placed in the coalfield areas because coal was available at comparatively cheap rates; and the economic consequences of the equalisation of freight charges would be most serious for those heavy industries upon which the country was so dependent for its exports at this particular time. Their costs would inevitably rise, and they would necessarily have to increase the price of their own products, with repercussions it was difficult to foresee.

Merchandise Charges Scheme

Discussions with trade and industry had been going on now since December, 1949, with the object of reaching as large a measure of agreement as possible before the B.T.C. merchandise charges scheme was submitted to the Transport Tribunal. The time allowed for the submission of draft schemes had been extended to six years from the passing of the Transport Act. Some further period would be required for the submission of the draft merchandise charges scheme to enable all concerned to consider the matter in the light of the Government's intentions in regard to transport.

It was significant that part of the motion called for amendment of the Transport Act. There was a volume of opinion on this point, states Mr. Braithwaite, of which the Government clearly must take note.

The debate was adjourned.

Staff & Labour Matters

Railway Shopmen's Wage Award

The findings of the Industrial Court, of which Sir John Forster is President, on the claim of the Employees' Side of the Railway Shopmen's National Council for a substantial increase in rates of pay for railway shopmen were made public on March 19.

The award takes note that the 8 per cent. advance offered by the Railway Executive would produce male adult rates which for some grades would be equal to, for other grades would be 6d. a week less than, and for no grade more than 1s. a week less than the rates the railway shopmen had expressed willingness to accept.

The court awards that as from September 3, 1951, the third offer of the Railway Executive made at a meeting of the Railway Shopmen's National Council on December 2, 1951, shall be implemented.

It points out that it is not to be assumed, because on this occasion a decision of the Railway Staff National Tribunal when applied to the railway shopmen's rates

chanced to bring those rates to a level justified on merits, that on any future occasion a decision of that Tribunal would be automatically applied to railway shopmen.

Specimen Increases

The table below shows some specimen rates. London rates are 3s. a week higher than those shown.

Grade	Present rate	Third offer by Railway Executive		Union's proposal
		Amt.	Inc.	Amt.
Schedule No. 1				
Fitter, Grade I ...	120s.	129s. 6d.	9s. 6d.	130s. 6d.
Schedule No. 2				
Group 1 ...	114s. 6d.	123s. 6d.	9s.	124s.
„ 6 ...	102s. 6d.	110s. 6d.	8s.	110s. 6d.
Schedule No. 6				
Stores issuer—				
Special ...	120s.	129s. 6d.	9s. 6d.	130s. 6d.
Grade 2 ...	108s.	116s. 6d.	8s. 6d.	117s.
Storesman ...	102s. 6d.	110s. 6d.	8s.	110s. 6d.
Apprentices, Boys and Youths :				
Age 15 ...	29s.	32s.	3s.	
„ 20 ...	71s.	78s.	7s.	

Reactions of C.S.E.U.

The Confederation of Shipbuilding & Engineering Unions expresses satisfaction that "the Industrial Court has upheld the principle that the wages of railway shopmen should be separately negotiated on merit through the Railway Shopmen's National Council and not be automatically regulated by fluctuations of other grades in the railway industry or by decisions of the Railway Staff National Tribunal."

Contracts & Tenders

The Railway Executive has placed a contract with the Metropolitan-Cammell Carriage & Wagon Co. Ltd. for 20 14-ton four-wheel either-side tipping wagons.

An order for 100 25-ton bogie goods wagons has been placed with the Gloucester Railway Carriage & Wagon Co. Ltd. by the Crown Agents for the Colonies. The wagons are for the Nigerian Railway.

The Crown Agents for the Colonies have recently placed the following contracts for the East African Railways & Harbours:—

Tanganyika Section

Metropolitan-Cammell Carriage & Wagon Co. Ltd. : 50 bogie covered goods wagons.

Kenya & Uganda Section

Metropolitan-Cammell Carriage & Wagon Co. Ltd : one twin-unit restaurant set, comprising a bogie saloon and a kitchen and staff car ; 425 bogie covered goods wagons.

Leyland Motors Limited has received an order from Vicicongo (Société des Chemins der fer Vicinaux du Congo) for a further nine diesel engines to be installed in American lorries operating on road services in the Belgian Congo.

A recent Reuters report states that the United States Export-Import Bank has announced four credits to the Indonesian Government amounting to a total of $22,700,000. The credits would be used, the Bank said, to finance import from the United States of productive equipment and materials required for reconstruction and development. The four credits are in addition to earlier ones totalling $52,245,500, which were made to Indonesia in January, 1951. The new allocations include $10,000,000 for additional road vehicles, principally lorries; and $2,650,000 for the purchase of equipment for four sawmills, and rails and diesel locomotives for forestry railways in the Java teak area, as well as other forestry equipment.

The Board of Trade, Special Register Information Service, has recently reported that the Stores Office, Thailand Railways, has issued a call for tenders (No. 95067) for boiler tubes as follows:—

2,600 boiler tubes (small), as per diagram S/M 2961
100 boiler tubes (large), as per diagram S/M 2962-1
1,500 boiler tubes (small), as per diagram S/M 1809
2,000 boiler tubes (small), as per diagram S/M 4177
400 boiler tubes (large), as per diagram S/M 4178
80 boiler tubes for MacArthur engines

Tenders should reach the Chief Stores Officer, Thailand Railways, Bangkok, before 10 a.m. on April 29. A copy of the tender documents and drawings is available for inspection at the Board of Trade, Commercial Relations & Exports Department. Further copies of the tender documents, without drawings, are available for loan to representatives of United Kingdom manufacturers in order of written application to the Department. Reference CRE/10593/52 should be quoted.

A further report from the Board of Trade, Special Register Information Service, states that the Directorate General of Supplies & Disposals, Government of India, has issued a call for tenders for A.B.C. couplers with spare parts. A copy of the tender documents is available for inspection at the Board of Trade, Commercial Relations & Exports Department and a further copy is available for loan to representatives of United Kingdom manufacturers in order of written application to the Department. Reference C.R.E./10484/52 should be quoted.

Tenders should reach the Office of the Directorate General of Supplies & Disposals, New Delhi, before April 24, and will be opened at 11.30 a.m. on April 25, in the presence of any tenderers who may desire to be present.

MEASURING INSTRUMENTS AT PHYSICAL SOCIETY'S EXHIBITION.—The British Iron & Steel Research Association has included two instruments for industrial needs among its exhibits at the Physical Society's Exhibition, which will open in London on April 3. One of these is a quick-acting, direct-reading chemical balance developed to speed up weighing operations in routine chemical analysis. This is expected to be of particular value where intensive methods of routine analysis call for large numbers of similar samples within one day. The second instrument, now being manufactured commercially, is a Barber high-precision disappearing filament optical pyrometer, designed for greater precision than most other instruments of its type while remaining portable and self-contained. The pyrometer has been developed from a N.P.L. design.

Notes and News

Vacancy for Junior Draughtsman.—A junior draughtsman is required, 23/24 years of age, for interesting development work. See Official Notices on page 363.

Vacancies with Unilever Limited.—Unilever Limited is looking for men, between the ages of 24 and 30, to train for managerial positions in transport. See Official Notices on page 363.

Development Engineer Required.—Applications are invited for the post of development engineer with extensive general engineering experience. See Official Notices on page 363.

Assistant Chief Draughtsman Required.—Applications are invited for the post of assistant chief draughtsman required by permanent way manufacturers in the Midlands. See Official Notices on page 363.

Vacancy for Assistant Chief Inspector.—Applications are invited for the post of assistant chief inspector, under 40 years of age, to take charge of works inspection department. See Official Notices on page 363.

Cartage and Terminal Supervisors' Courses.—The annual discussion courses for British Railways Cartage and Terminals Supervisors are to take place this year at the Staff Training College, Woking. There will be five courses, each lasting a week, commencing on March 31, April 21 and 28, and May 12 and 19. Each course will include a demonstration of palletisation, a new feature.

The Great Western Railway (London) Dramatic Society.—The Great Western Railway (London) Dramatic Society is presenting "Bonaventure," by Charlotte Hastings, at the Rudolf Steiner Theatre tonight, March 28, and tomorrow, March 29. The cast, drawn from members of the clerical staff of the Western Region, includes Dorothy Lees in the title role, with Phyllis Griffiths as Sarat Carn, the prisoner under sentence of death. Arthur E. Clapp is the producer.

Southern Region Debating Society.—British Railways, Southern Region, Lecture & Debating Society has announced that its 1952 Belgian Tour, which is being held between Saturday, May 3 and Sunday, May 11, will not be affected by the Government decision on currency and will still allow participants up to £10 for spending abroad. Four nights will be spent in Brussels and the remainder at Dinant, from which a party will be taken to see the underground caves at Han-Sur-Lesse. The Port and City of Antwerp will be visited from Brussels, and in addition to a number of interesting technical visits, there will be a half-day excursion to the Battlefield of Waterloo. The technical visits will be purely optional.

Restoration of Winter Train Service Cuts.—British Railways announce that in consequence of the much improved freight traffic position, the majority of the passenger trains which were withdrawn last October in order to release train crews for essential freight movement, will be restored next month. On and from Monday, April 7, over 120 additional weekday and Sunday trains will be restored. Most of the trains concerned are local services, but there will also be some expresses on such routes as Euston-Blackpool; Euston-

OFFICIAL NOTICES

The engagement of persons answering Situations Vacant advertisements must be made through a Local Office of the Ministry of Labour or a Scheduled Employment Agency if the applicant is a man aged 18-64 inclusive or a woman aged 18-59 inclusive unless he or she, or the employment, is excepted from the provisions of the Notification of Vacancies Order, 1952.

INSPECTION. Assistant Chief Inspector to take charge of works Inspection department, age under 40: state in writing experience and technical qualifications, and salary required to:—PERSONNEL MANAGER, NORTH BRITISH LOCOMOTIVE CO., LTD., 110 Flemington Street, Glasgow, N.

DEVELOPMENT ENGINEER: Graduate or A.M.I.M.E., standard required with extensive general engineering experience. Duties include design work, correspondence, and interviewing of customers. Good prospects. Apply stating age, qualifications, experience and salary required, to the—ANDRE RUBBER COMPANY LIMITED, Kingston By-Pass, Surbiton, Surrey.

RUNNING Superintendent for the Southern Railway of Peru, must have served apprenticeship railway workshop and ten years' experience as an administrative and technical officer. Knowledge of Spanish desirable. Must be under 50 years of age. Apply Secretary, THE PERUVIAN CORPORATION LIMITED, 144, Leadenhall Street, London, E.C.3.

BOUND VOLUMES.—We can arrange for readers' copies to be bound in full cloth at a charge of 25s. per volume, post free. Send your copies to the SUBSCRIPTION DEPARTMENT, Tothill Press Limited, 33, Tothill Street, London, S.W.1.

JUNIOR DRAUGHTSMAN required for interesting development work, age 23/24 years. Must have completed Military service. State experience and salary required.—GRESHAM & CRAVEN LTD., Manchester 5. Apply Employment Exchange.

DRAUGHTSMAN required by Gloucester Railway Carriage & Wagon Company, Gloucester, preferably with Steel Car or Diesel Car experience. 5-day week. Pension Scheme in operation. Apply LOCAL MINISTRY OF LABOUR AND NATIONAL SERVICE.

UNILEVER Limited is looking for men, between the ages of 24 and 30, to train for managerial positions in Transport. The prospects are good and extend to management and administrative positions in all shipping, rail, road and inland water transport activities of the Company in the United Kingdom, and possibly overseas. These activities include transport management at the Company's various factories, the administration of the Company's national warehousing and distributive organisation, cargo superintendence, etc. The training period envisaged is one of approximately two years depending on experience; during this period the candidate must be mobile. The standard required is high and a starting salary of £575 p.a. will be paid. —Box 450, *The Railway Gazette*, 33 Tothill Street, London, S.W.1.

ASSISTANT Chief-Draughtsman required by Permanent Way Manufacturers in the East Midlands. Must be experienced in British Standard and Private Sidings practice and able to take site surveys etc. Only those with P.W. experience need apply. Superannuation scheme, 5 day week, canteen, etc. Write stating age, experience, salary required to—Box 443, *The Railway Gazette*, 33, Tothill Street, London, S.W.1.

DRAUGHTSMAN required, preferably with experience of railway rolling stock design. Salary in accordance with previous experience and qualifications.—CRAVENS RAILWAY CARRIAGE & WAGON CO. LTD., Darnall, Sheffield, 9. Apply Employment Exchange.

LOCOMOTIVE, CARRIAGE and WAGON SENIOR DRAUGHTSMAN 30/35 years of age. Qualifications: Must have served a full general apprenticeship in an Engineering workshop (preferably Railway) and have had at least five years' drawing office experience with some time in an executive capacity. A knowledge of Spanish an advantage. Future prospects. Apply to the Secretary, PERUVIAN CORPORATION LIMITED, 144, Leadenhall Street, London, E.C.3.

THE GAS-TURBINE LOCOMOTIVE. A technical description of the gas-turbine recently constructed by the Metropolitan-Vickers Electrical Co. Ltd. for the Western Region, British Railways. Subjects dealt with include body construction, bogies, traction motors, prime mover, generators and auxiliary equipment. A folding plate drawing of the locomotive is included together with illustrations and diagrams. Reprinted from *The Railway Gazette*, February 1, 1952. Price 5s. Post free 5s. 2d. *The Railway Gazette*, 33, Tothill Street, London, S.W.1.

JUST PUBLISHED.—Twenty-Five Years of the North Eastern Railway, 1898-1922. By R. Bell, C.B.E., Assistant General Manager, N.E.R. and L.N.E.R. Companies, 1922-1943. Full cloth. Cr. 8vo. 87 pages. 10s. 6d.—*The Railway Gazette*, 33, Tothill Street, London, S.W.1.

Wolverhampton; Liverpool and Manchester-Birmingham; and London-Hastings. The inter-regional services between York and Bournemouth, and between Cardiff and York, will resume running (Fridays and Saturdays only) on April 18. Since the beginning of the year services have been reinstated already on 16 routes.

Southern Railway Dramatic Society.—The Southern Railway Dramatic Society is presenting "Call it a Day," a comedy by Dodie Smith, at the Scala Theatre, Charlotte Street, London, W.1, at 6.45 p.m. on April 22.

Institution of Locomotive Engineers.—A summer meeting of the Members of the Institution of Locomotive Engineers will be held at Rugby on April 8, when there will be a visit to the Willans Works of the English Electric Co. Ltd. The party will assemble at Euston Station, and will depart by special train at approximately 12.15 p.m., arriving at Rugby Midland at 1.51 p.m.; lunch will be served on the train. The special train will return from Rugby at 5.20 p.m. and arrive at Euston 6.50 p.m., where the meeting will terminate.

British Transport Officers' Guild Reorganisation.—The British Railway Officers' Guild, which was founded in 1943 for the purpose of representing the officers and senior salaried staff of the railways, subsequently widened its scope to cover officers and senior salaried staff of the British Transport Commission and its Executives and changed its title to the present one of British Transport Officers' Guild. On October 1, 1951, an association of the officers and senior staff of the Road Haulage Executive merged with the Guild and so necessitated a revision of the constitution. The new constitution provides for two Divisions, the Railways & General Division, and the Roads Division. The Railways & General Division includes members of the staff of the Railway Executive, London Transport Executive, Docks & Inland Waterways Executive, Hotels Executive, and Railway Clearing House. The Roads Division includes members of the staff of the Road Haulage Executive, Road Passenger Executive, Tilling Group, and Scottish Omnibuses Group. Members of the staff of the British Transport Commission may join either Division. Each Division of the Guild will be directly responsible for the affairs of the members of that Division and will conduct negotiations with the appropriate Executives of the British Transport Commission, whilst the Management Council comprising members of each Division, elected in equal numbers, will be responsible for co-ordinating the work of the Divisions and ensure liaison in matters common to both.

Ocean Terminal at Plymouth Reopened.—The ocean passenger accommodation at Millbay Docks, Plymouth, severely damaged by enemy action during the war, was officially reopened on March 11 on behalf of the Docks & Inland Waterways Executive by Mr. R. P. Biddle, Docks & Marine Manager, Southampton & Plymouth (Millbay) Docks. Mr. Biddle, who was accompanied by his Assistant, Mr. W. F. Griffiths, by Mr. G. A. Ashwell, Docks Accountant, and by Mr. L. J. Lean, Dock Manager at Plymouth, said that 15,944 passengers had been handled in 1951, for whom 61 special trains were provided; in addition, 39 specials were run for mails. The ocean terminal as now restored accommodates, according to type of traffic, 500-700 passengers, who can walk under cover nearly all the way from the tender to the reception rooms, where refreshments can be obtained, railway tickets purchased and so on, while baggage is offloaded from the tender. The number of passengers dealt with have steadily increased since the war and now stand at about half the prewar level.

L.C.C. and London Fare Increases.—At a meeting of the London County Council on March 20, Mr. I. J. Hayward, Leader of the Council, commented on the British Transport Commission statement summarised on page 360 of this issue. He said that since October, 1950, the Transport Tribunal had granted two increases bringing an additional £13,800,000 a year, though the Commission stated that London Transport costs had increased by only £10 million. The Commission has replied that Mr. Hayward took account of both increases in fares and only one increase in costs. If Mr. Hayward wished to add to the increase now granted, the produce of the earlier increase of about £3,500,000, granted in August, 1950, and operated from October 1, 1950, to cover increased costs which had already accrued before August, then he must also bring in those increased costs. When this was done, the Commission adds, the increase in costs was very much greater than £10 million, and larger than the total of the produce of both the fare increases together.

British Railways Coal, Iron and Steel Carryings.—British Railways cleared 395,270 tons of coal from deep-mined pits and opencast sites during the 48 hr. ended 6 a.m. on March 24, making the total for the week 3,219,750 tons. During the week ended March 15, 203,867 tons of iron and steel were conveyed from the principal steel works.

Improved Third Class Sleeping Cars on the "Aberdonian."—On and from April 1, new type third class sleeping cars are to be operated between Aberdeen and London on the "Aberdonian" (7.10 p.m. from Aberdeen and 7 p.m. from Kings Cross). These cars have two berths in each compartment instead of four as in the existing types, and full bedding instead of rugs and pillows. Each compartment contains an upper and a lower sleeping berth fitted with a well-sprung mattress, blankets and sheets. Individual lighting is provided for each berth, and there is a wash basin with hot and cold running water in each compartment.

Integrated Management for Transport.—Lecturing to the Hull Centre of the Institute of Traffic Administration recently, Mr. H. F. Sanderson, Assistant Commercial Superintendent, North Eastern Region, said that to make a success of the integration of inland transport, he considered it necessary to have integrated management at all levels in the B.T.C. organisation. At present, integration was made more difficult because the efficiency of rail and road units, districts and divisions was judged by their individual financial results. This created a natural reluctance to surrender traffic if it would prejudice the financial results of those who surrendered it. If the management at all levels were integrated

the various groups, districts and divisions would be judged by their total results (road and rail) and this would encourage the use of the most appropriate form of transport in the interest of the B.T.C. and, therefore, of public and traders. Integration would be impossible without the wholehearted co-operation of staff. There need be no fear of redundancy, which was more likely to arise from a failure to provide the services required by the public and traders than from the integration of nationalised transport, which alone could provide efficient services throughout the country.

Forthcoming Meetings

March 28 (*Fri.*).—Institute of Welding, South London Branch. Annual Dinner, in the ballroom of the Charing Cross Hotel, at 7 for 7.30 p.m.

March 28 (*Fri.*) & 29 (*Sat.*).—Association of Supervising Electrical Engineers, Central Regional Council. Electrical Engineers Exhibition, at the Royal Horticultural New Hall, Greycoat Street, S.W.1, between 10 a.m. and 7 p.m.

March 28 (*Fri.*).—Institution of Mechanical Engineers, Storey's Gate, S.W.1, at 5.30 p.m. Annual General Meeting for corporate and non-corporate Members only.

March 29 (*Sat.*).—Railway Students' Association. Visit to new signalbox at Stratford and Ilford car sheds.

March 29 (*Sat.*)—British Railways, Southern Region, Lecture & Debating Society. Visit to National Physical Laboratory, Teddington, at 10 a.m.

March 31 (*Mon.*).—Institute of Transport, Visual Aids Study Group, at 80, Portland Place, London, W.1, at 6 p.m. Three films: "Seven more Stations," lent by the British Transport Commission; "Into the Blue," lent by the British Overseas Airways Corporation; and "Railroads," lent by French Railways Limited.

April 2 (*Wed.*).—Institution of Railway Signal Engineers, at the Institution of Electrical Engineers, Savoy Place, W.C.2, at 6 p.m. Annual General Meeting.

April 2 (*Wed.*).—British Railways, Southern Region, Lecture & Debating Society. Visit to the Rugby Locomotive Testing Station, and to the British Thomson-Houston Co. Ltd. Works. Departure from Euston at 8.30 a.m.

April 2 (*Wed.*).—Permanent Way Institution, Leeds Section, at the Church Institute, Albion Place, Leeds, 1, at 7 p.m. "Some Estate Department Activities as Affecting Permanent Way," by Mr. J. R. D. Mitchell, District Estate Agent, Leeds, North Eastern Region.

April 3 (*Thu.*).—Institution of Locomotive Engineers, at the Institution of Mechanical Engineers, Storey's Gate, S.W.1, at 5.30 p.m. Informal discussion on "Passenger Comfort on Modern Coaching Stock."

April 7 (*Mon.*).—Institute of Transport, Metropolitan Section, at 80, Portland Place, W.1, at 5.30 for 6 p.m. "Administration in Transport," by Mr. Michael Robbins.

April 7 (*Mon.*).—Historical Model Railway Society, at the headquarters of the Stephenson Locomotive Society, 32, Russell Road, W.14, at 7 p.m. "Pre-Grouping Great Western Coaches and their Construction in Model Form," by Mr. Michael Longridge.

Railway Stock Market

The process of adjustment in markets which followed the Budget and the 4 per cent. Bank rate has continued. Long-dated and irredeemable British Funds have strengthened on the view that, looking ahead, the curbing of inflation and the rebuilding of gold and dollar reserves are bound to help sentiment in regard to gilt-edged investments. A helpful influence recently has of course been the rise in the value of the pound in terms of U.S.A. dollars, and there is a disposition to argue that from the short term point of view, gilt-edged stocks may have better scope for capital appreciation than industrial shares. Industrials are still affected by the difficulty of calculating the position of many companies in regard to E.P.T. The pending Finance Bill should clarify matters; on the other hand, few shareholders will have the particulars of past earnings of the companies in which they are interested, which would enable the E.P.L. standard to be estimated. In the circumstances, it is believed in the City that in due course most companies will issue official statements as to their E.P.L. position.

The uncertainty in industrial shares is also caused by general recognition that companies confined mainly to business at home, are having profit margins reduced because of higher costs, and that at the same time competition is growing. Many companies will have to raise additional capital this year. If there were a big rush of new issues, investors would have to sell part of their existing holdings to take up new shares.

Foreign Rails have been quiet and easier in the absence of improved demand. Antofagasta ordinary eased further to 14¾, and the preference stock was 65. On the other hand, the assumption that in due course a take-over offer will materialise, and that it would be above current market values if it were on a fair and equitable basis, helped sentiment in regard to United of Havana stocks. The 5 per cent. debentures were fairly active around 17¼. International Railways of Central America stocks were inactive in front of the annual meeting.

Canadian Pacific at $63½ have not held best levels, but remained active. "Canpacs" are the dollar security having the biggest holding by investors in the U.K. They are likely to continue to attract on the potentialities of the group's oil and kindred interests and because the shares offer a means of participating in the trend of New York markets with which they naturally tend to move closely.

Leopoldina stocks remained firm with the ordinary at 11¼ and the preference 38¾. Leopoldina Terminal debentures were 18¼ and the ordinary units somewhat firmer at 11¼d.

In other directions, Manila "A" debentures have been less active and were quoted at 66 with the preference shares at 7s. 4½d. San Paulo 10s. units have remained around 13s. Nitrate Rails shares were 22s. and Taltal easier at 17s. 3d.

Among road transport shares, Southdown were 78s. 9d., Lancashire Transport 45s., West Riding 34s. and Northern General 75s. 6d. B.E.T. deferred stock was down to £335.

Engineering and kindred shares looked steadier, as buyers had been more in evidence on the view that the recent decline in prices had been carried too far. It is recognised that because of E.P.L. there will not be much scope for higher dividends, but most companies should be able to keep dividends at last year's rates, and on this basis yields at current prices seem attractive.

Guest Keen at 47s. yield over 5⅞ per cent. and Vickers at 44s. over 5⅝ per cent., while a yield of over 5⅝ per cent. is also shown by Babcock & Wilcox at 63s. Ransomes & Marles have strengthened to 20s. 9d. and Cammell Laird 5s. shares at 10s. 9d. have been steady on expectations that the forthcoming dividend will keep the year's total at 12 per cent. International Combustion 5s. shares have been firm at 19s. 6d., Neepsend were 21s. 9d., while Tube Investments were 98s. 9d. and T. W. Ward steady at 70s.

Among shares of locomotive builders and engineers, Beyer Peacock were 29s. 6d., Birmingham Carriage 32s. 6d., Hurst Nelson came back to 47s. at Glasgow, and North British Locomotive were 15s. 9d. Vulcan Foundry eased to 21s. 9d. despite market hopes of a small increase in the dividend due to be announced next month. Good results and an increased payment have recently been announced by Robert Stephenson & Hawthorns. Gloucester Wagon 5s. shares were 11s. 9d. and Wagon Repairs 10s. 9d., with Charles Roberts at 21s.

Traffic Table of Overseas and Foreign Railways

	Railway	Miles open	Week ended	Traffics for week: Total this year	Traffics for week: Inc. or dec. compared with 1949/50	No. of week	Aggregate traffics to date: Total 1950/51	Aggregate traffics to date: Increase or decrease
				£	£		£	£
South & Cen. America	Antofagasta ...	811	14.3.52	174,110	+ 43,020	11	1,585,760	+ 599,780
	Costa Rica ...	281	Jan., 1952	c1,495,633	+ c340,108	31	c8,756,306	+ c1,420,052
	Dorada	70	Jan., 1952	34,370	– 7,187	4	34,370	– 7,187
	Inter. Ctl. Amer....	794	Jan., 1952	$1,315,737	+ $393	4	$1,315,737	+ $393
	Paraguay Cent. ...	274	28.12.51	G289,547	+ G102,688	26	G8.823,911	+ G3.556,978
	Peru Corp. ...	1,050	Feb., 1952	$7,931,000	+ $1,312,000	35	$65,979,000	+ $5,211,000
	,, (Bolivian Section)	66	Feb., 1952	Bs.15,175,000	+ Bs.3,319,000	35	Bs.126,266,000	+ Bs.30,009,000
	Salvador	100	Nov., 1951	c140,000	– c28,000	22	c635,000	+ c112,000
	Taltal	147	Feb., 1952	$2,531,000	+ $797,000	35	$17,457,000	+ $4,860,000
Canada	Canadian National†	23,473	Jan., 1952	17,157,000	+ 1,521,000	4	17,157,000	+ 1,521,000
	Canadian Pacific† ...	17,037	Jan., 1952	11,534,000	+ 618,000	4	11,534,000	+ 618,000
Various	Barsi Light* ...	167	Feb., 1952	36,960	+ 3,945	48	369,540	+ 50,557
	Gold Coast ...	536	Jan., 1952	382,363	+ 72,800	43	2,854,481	+ 279,372
	Mid. of W. Australia	277	Dec., 1951	52,821	+ 10,980	26	357,578	+ 122,355
	South Africa ...	13,398	23.2.52	1,950,261	+ 168,491	47	89,744,472	+ 8,604,427
	Victoria	4,744	Nov., 1951	2,143,056	+ 1,149,080‡	22	—	—

* Receipts are calculated at 1s. 6d. to the rupee † Calculated at $3 to £1
‡ No comparison with November, 1950, when, due to a strike, services did not operate